



HotSpring[®]
Portable Spas

Owner's Manual



**Watkins
Manufacturing Corporation**

*Congratulations on your decision to enjoy the finest spas available...
Welcome to the growing family of Hot Spring® Spa owners.*



HotSpring® *Portable Spas*

Built for a lifetime of relaxation.™ *Owner's Manual*

This Owner's Manual will acquaint you with your new spa's operation and general maintenance. We suggest that you take some time to carefully review all seven sections. Please keep this manual available for reference.

If you have any questions about any aspect of your spa's set-up, operation or maintenance, contact your authorized Hot Spring® Spa dealership. They are trained professionals who are familiar with the product as well as new spa ownership concerns. Their expertise will facilitate the enjoyment of your new Hot Spring® Spa.

The serial number label is located within the equipment compartment of your Hot Spring® Spa.

IMPORTANT: Watkins Manufacturing Corporation reserves the right to change specifications or design without notification and without incurring any obligation.

DATE PURCHASED: _____

DATE INSTALLED: _____

DEALER: _____

ADDRESS: _____

TELEPHONE: _____

SPA MODEL/SERIAL NUMBER: _____

COVER SERIAL NUMBER: _____

ACCESSORY SERIAL NUMBERS: _____



Important!

In most cities and counties, permits will be required for the installation of electrical circuits or the construction of exterior surfaces (decks and gazebos). In addition, some communities have adopted residential barrier codes which may require fencing and/or self-closing gates on the property to prevent unsupervised access to a pool (or spa) by children under 5 years of age. Your Hot Spring® Spa is equipped with a locking cover that meets the ASTM F1346-91 Standard for Safety Covers and as a result, is usually exempt from most barrier requirements. As a general practice, your local Building Department will inform you of any applicable barrier requirements at the time a permit is obtained for the installation of an electrical circuit. Your Hot Spring® Spa dealer can provide information on which permits may be required.

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The following instructions are required to be printed by Underwriters Laboratories as a condition of their listing of this product. They contain important safety information, and we strongly encourage you to read and apply them.

IMPORTANT SAFETY INSTRUCTIONS

WHEN INSTALLING AND USING THIS ELECTRICAL EQUIPMENT, BASIC SAFETY PRECAUTIONS SHOULD ALWAYS BE FOLLOWED, INCLUDING THE FOLLOWING:

1. READ AND FOLLOW ALL INSTRUCTIONS.
- 2A. **WARNING:** To reduce the risk of injury, do not permit children to use this product unless closely supervised at all times.
- 2B. **DANGER:** RISK OF CHILD DROWNING. Extreme caution must be exercised to prevent unauthorized access by children. To avoid accidents, ensure that children cannot use the spa or hot tub unless they are supervised at all times.

115 VOLT, CORD AND PLUG CONNECTED MODELS

- 3A. **DANGER:** RISK OF INJURY. Connect only to a grounded source.
- 3B. Do not bury the power cord.
- 3C. **WARNING:** To reduce the risk of electric shock, replace a damaged cord immediately.
4. A ground terminal (pressure wire connector) is provided on the surface of the control box inside the equipment compartment. This connector should be bonded with a minimum No. 8 AWG (8.4 mm²) solid copper wire between this unit and any metal ladders, metal water pipes, metal enclosures of electrical equipment, conduit or metal equipment within five feet (1.5 m) of the spa. If the spa is located on a reinforced concrete pad, the reinforced steel should also be bonded to the ground terminal.
5. **WARNING:** Your spa is equipped with a ground fault circuit interrupter (GFCI) on the end of the power supply cord. Before each use of the spa, with the plug connected to the power supply and the unit operating, push the "Test" button. The unit should stop operating and the GFCI power indicator will go out. Wait 30 seconds and then reset the GFCI by pushing the "Reset" button. The GFCI power indicator will turn on, restoring power to the spa. If the interrupter does not perform in this manner, it is an indication of an electrical malfunction and the possibility of an electric shock. Disconnect the plug from the receptacle until the fault has been identified and corrected.

NOTE: Failure to wait 30 seconds before resetting the GFCI may cause the spa's Power Indicator (on the control panel) to blink. If this occurs, repeat the GFCI test procedure.

230 VOLT, PERMANENTLY INSTALLED OR CONVERTED MODELS

6. A ground terminal is provided on the terminal block (TB-1, terminal 7) located inside the control box. To reduce the risk of electric shock, connect this terminal to the grounding terminal of your electrical service or supply panel with a continuous green, insulated copper wire. The wire must be equivalent in size to the circuit conductors supplying the equipment. In addition, a bonding terminal (pressure wire connector) is provided on the outside of the control box for bonding to local ground points. To reduce the risk of electric shock, this connector should be bonded with a No. 8 AWG (8.42 mm²) solid copper wire to any metal ladders, water pipes, or other metal within 5 feet (1.5 m) of the spa to comply with local requirements.
7. Your spa uses ground fault circuit interrupters in the electrical subpanel. Before each use of the spa and with the unit operating, push the Test button on each breaker. The switch should click over to the "Trip" position. Wait 30 seconds and reset each GFCI breaker by switching it completely off and then completely on. The switch should then stay on. If either of the interrupters does not perform in this manner, it is an indication of an electrical malfunction and the possibility of an electric shock. Disconnect the power until the fault has been identified and corrected.

NOTE: Failure to wait 30 seconds before resetting the GFCI may cause the spa's Power Indicator (on the control panel) to blink. If this occurs, repeat the GFCI test procedure.

ALL SPA MODELS

8. Install the spa so proper drainage is provided for the compartment containing the electrical components.
9. **DANGER:** RISK OF ELECTRIC SHOCK. Install the spa at least 5 feet (1.5 m) from all metal surfaces. (A spa may be installed within 5 feet of metal surfaces if, in accordance with the National Electric Code ANSI/NMFA70 - 1993, each metal surface is permanently connected to a minimum No. 8 (8.42 mm²) solid copper conductor attached to the wire bonding connector on the terminal box that is provided for this purpose.)
10. **DANGER:** RISK OF ELECTRIC SHOCK. Do not permit any appliance, such as a light, telephone, radio, or television within five feet (1.5 m) of the spa or hot tub.
11. **WARNING:** To reduce the risk of injury:

The water in the spa should never exceed 104°F (40°C). Water temperatures between 100°F (38°C) and 104°F (40°C) are considered safe for a healthy adult. Lower water temperatures are recommended for extended use (exceeding 10 minutes) and for young children.

Since excessive water temperatures have a high potential for causing fetal damage during the early months of pregnancy, pregnant or possibly pregnant women should limit spa water temperatures to 100°F (38°C).

Before entering a spa, the user should measure the water temperature with an accurate thermometer since the tolerance of temperature-regulating devices may vary as much as ±5°F (3°C).

The use of drugs, alcohol, or medication before or during spa use may lead to unconsciousness with the possibility of drowning.

Persons suffering from obesity or with a medical history of heart disease, low or high blood pressure, circulatory system problems or diabetes should consult a physician before using the spa.

Persons using medications should consult a physician before using a spa since some medication may induce drowsiness while other medication may affect heart rate, blood pressure, and circulation.

12. **DANGER:** TO REDUCE THE RISK OF INJURY TO PERSONS. Do not remove the suction fittings (filter standpipes) located in the filter compartment!
13. **DANGER:** RISK OF INJURY. The suction fittings in the spa are sized to match the specific water flow created by the pump. Should the need arise to replace the suction fittings or the pump, be sure that the flow rates are compatible.
14. SAVE THESE INSTRUCTIONS.

SAFETY SIGN: Each Hot Spring® Spa is shipped with a SAFETY SIGN in the spa's owner's package. Underwriters Laboratories recommends this sign be permanently installed where it is visible to the users of the spa. To obtain additional SAFETY SIGNS, contact your Hot Spring® dealer and request Part # 70798.

I. GENERAL INFORMATION

PERSONAL SAFETY

Prolonged immersion in hot water can result in HYPERTHERMIA, a dangerous condition which occurs when the internal temperature of the body reaches a level above normal (98.6°F). The symptoms of hyperthermia include dizziness, fainting, drowsiness, lethargy, and a body temperature above 98.6°F. The physical effects of hyperthermia include unawareness of impending hazard, failure to perceive heat, failure to recognize the need to exit the spa, physical inability to exit the spa, fetal damage in pregnant women, and unconsciousness resulting in a danger of drowning.

WARNING: The use of alcohol, drugs, or medication can greatly increase the risk of fatal hyperthermia in hot tubs and spas.

Persons taking medications which induce drowsiness such as tranquilizers, antihistamines or anticoagulants should not use the spa. Pregnant women and persons with a medical history of heart disease, diabetes, or high blood pressure should consult a physician before using the spa.

Children are especially sensitive to hot water. At no time should children have unsupervised access to the spa. **Children must not be allowed to climb onto the spa cover.** All Hot Spring® Spas are equipped with a locking cover that meets the ASTM F1346-91 Standard for Safety Covers. Always lock the child resistant locks after using the spa for your children's safety.

DO:

- Be sure your spa is connected to the power supply correctly - use a licensed contractor.
- Disconnect the spa from the power supply before draining the spa or servicing the electrical components.
- Test the Ground Fault Circuit Interrupter(s) monthly.
- Test the water temperature with your hand before entering the spa to be sure that it's comfortable.
- Remember that wet surfaces can be very slippery. Take care when entering and exiting the spa.
- Use the cover when the spa is not in use, whether it is empty or full.
- Keep the water clean and sanitized with correct chemical care.
- Turn on the 10-minute clean cycle when adding ANY spa water chemicals into the filter compartment.
- Clean the filter cartridges monthly to remove debris and mineral buildup which may affect the performance of the hydromassage jets, limit the flow, or trip the high limit thermostat which will turn off the entire spa.

DON'T:

- Use the spa with the equipment compartment door removed.
- Use the spa for long periods of time at water temperatures in excess of 104°F.
- Allow the jet pump(s) to operate for extended periods of time with the cover in place. Extended pump operation will cause a slow heat buildup due to water friction. The spa equipment controls are equipped with a built-in safety timer that will automatically shut off the jet pump after two hours of continuous operation should it have been left on inadvertently.
- Operate the spa at any time with the filter cartridges removed.
- Lift or drag the cover by using the coverlock straps; always lift or carry the cover by using the handles.
- Store chemicals in the spa's equipment compartment.
- Hesitate to call your Hot Spring® Spa representative with any questions or maintenance problems.

II. SPA SPECIFICATIONS

	Footprint dimensions	Height	Effective filter area	Heater (Watts)	Water capacity	Dry weight	Filled weight*	Dead weight*	Electrical Requirements
Grandee® (Model G)	7'7" x 8'4" 2.31m x 2.54m	36" 91.4cm	150 Square feet	6,000	500 Gallons 1,893 Litres	880 Lbs. 399 Kg.	6,280 Lbs. 2,849 Kg.	110 Lbs. per square foot	230 Volt, 50 Amp Single phase GFCI protected circuit
Landmark® (Model S)	8'5" x 7'7" 2.57m x 2.31m	36" 91.4cm	150 Square feet	6,000	425 Gallons 1,609 Litres	830 Lbs. 376 Kg.	5,280 Lbs. 2,395 Kg.	110 Lbs. per square foot	230 Volt, 50 Amp Single phase GFCI protected circuit
Classic® (Model F)	7'6" x 7'7" 2.29m x 2.31m	33" 83.8cm	90 Square feet	1,500 or 6,000	365 Gallons 1,382 Litres	543 Lbs. 246 Kg.	4,513 Lbs. 2,047 Kg.	100 Lbs. per square foot	115 Volt, 20 Amp Dedicated GFCI protected circuit or 230 Volt, 50 Amp Single phase GFCI protected circuit
Sovereign® (Model I)	6'8" x 7'9" 2.03m x 2.36m	33" 83.8cm	90 Square feet	1,500 or 6,000	355 Gallons 1,344 Litres	680 Lbs. 308 Kg.	4,570 Lbs. 2,073 Kg.	100 Lbs. per square foot	115 Volt, 20 Amp Dedicated GFCI protected circuit or 230 Volt, 50 Amp Single phase GFCI protected circuit
Prodigy® (Model H)	6'2" x 7'3" 1.88m x 2.21m	29" 73.7cm	90 Square feet	1,500 or 6,000	310 Gallons 1,173 Litres	534 Lbs. 242 Kg.	3,889 Lbs. 1,764 Kg.	100 Lbs. per square foot	115 Volt, 20 Amp Dedicated GFCI protected circuit or 230 Volt, 50 Amp Single phase GFCI protected circuit
Jetsetter® (Model J)	5'2" x 6'10" 1.57m x 2.08m	29" 73.7cm	90 Square feet	1,500 or 6,000	215 Gallons 814 Litres	469 Lbs. 213 Kg.	2,714 Lbs. 1,231 Kg.	90 Lbs. per square foot	115 Volt, 20 Amp Dedicated GFCI protected circuit or 230 Volt, 50 Amp Single phase GFCI protected circuit

CAUTION: Watkins Manufacturing suggests a structural engineer or contractor be consulted before the spa is placed on an elevated deck.

* **NOTE:** The "Filled weight" and "Dead weight" of the spa includes the weight of the occupants (assuming an average occupant weight of 175 lbs).

III. INSTALLATION INSTRUCTIONS

SITE PREPARATION

You probably have a spot picked out for your new spa, whether it's indoors or outdoors, on a patio or on a deck. Just make sure you check the following:

- Always put your spa on a structurally sound, level surface. A filled spa can weigh a great deal. Make certain that the location you choose can support the weight.
- Don't forget to level your spa before filling it. (See Spa Leveling Instructions included with Owner's Packet.)
- Be sure to locate your equipment compartment, which houses all of the electrical components, in a place where water drainage will be away from it. Allowing water into the equipment compartment can cause damage to the electronics, or may result in tripping the circuit breaker on your house's electrical panel.
- Leave yourself easy access to the circuit breakers in the subpanel (230 volt models), or to the interrupter switch on the end of the power cord (115 volt models).
- Never let water into the subpanel (230 volt models), into the interrupter switch (115 volt models), or into the electrical outlet into which your spa is plugged. Your 115 volt Hot Spring® Spa comes with a protective box designed to keep out rain and water from sprinkler systems. Your 230 volt spa's subpanel is raintight when installed correctly with the door closed. Periodically check these conditions and correct any flaws if detected.
- Leave access to the equipment compartment for periodic spa care and maintenance.

OUTDOOR AND PATIO INSTALLATION

No matter where you put your new spa, it's important that it has a solid foundation to support it. In fact, structural damage to the spa resulting from incorrect installation or placement on an inadequate foundation is not covered under the spa's limited warranty.

If you install the spa outdoors, we recommend a reinforced concrete pad at least four inches thick. The reinforcing rod or mesh in the pad should be attached to a bond wire (see page 2, item 4).

If you place the spa on the ground, even temporarily, place stepping stones under the leveling areas (see Spa Leveling Instructions). The stones should be at least two inches thick and twelve inches square. Even with stones in place, the spa will inevitably settle and become unlevel. Plus, a spa surrounded by dirt or grass will soon be filled with dirt or grass from users' feet. So get it onto a solid foundation as soon as possible.

DECK INSTALLATION

To be certain your deck can support your spa, you must know the deck's maximum load capacity. Consult a qualified building contractor or structural engineer. To find the weight of your spa, its contents and occupants, refer to the Spa Specification chart on page 4. This weight per square foot must not exceed the structure's rated capacity, or serious structural damage could result.

INDOOR INSTALLATION

Be aware of some special requirements if you place your spa indoors. Water will hit the floor around the spa, which can cause poor footing, so flooring materials should give your feet good grip when wet, and good drainage is essential. Water may also get into woodwork and produce dryrot, mildew, or other problems. The area's humidity will naturally be higher with the spa installed, so check for airborne moisture's effects on exposed wood, paper, etc. in the room. To minimize these effects and to make the room more comfortable, it is best to provide plenty of ventilation to the spa area. An architect can help to determine if more ventilation must be installed. Additionally, when building a new room for the spa, install a floor drain to allow easy cleanup of water and disposal of water when draining the spa.

Hot Spring® Spas are equipped with a jet pump shroud to remove excessive heat from the equipment compartment. Find this vent (it's under a corner of wood-skirted models, and directly below the equipment compartment of Classic® spa models) and be sure the vent is not blocked by anything, including carpeting.

Your Hot Spring® Spa dealer can help you with local information such as zoning regulations and building codes. He can also give you a copy of our planning guide—just ask for Hot Spring® Spa Pre-Delivery Instructions.

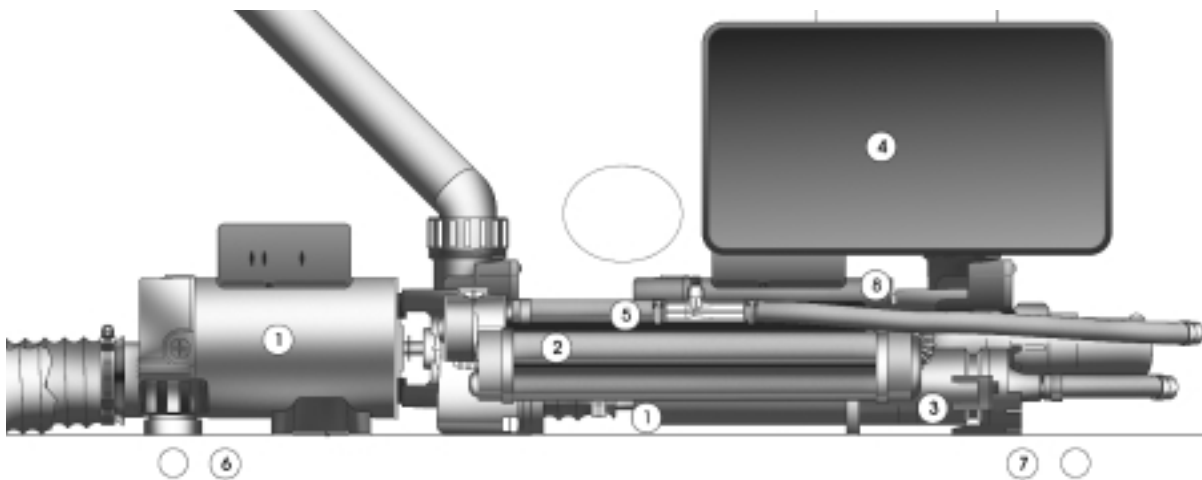
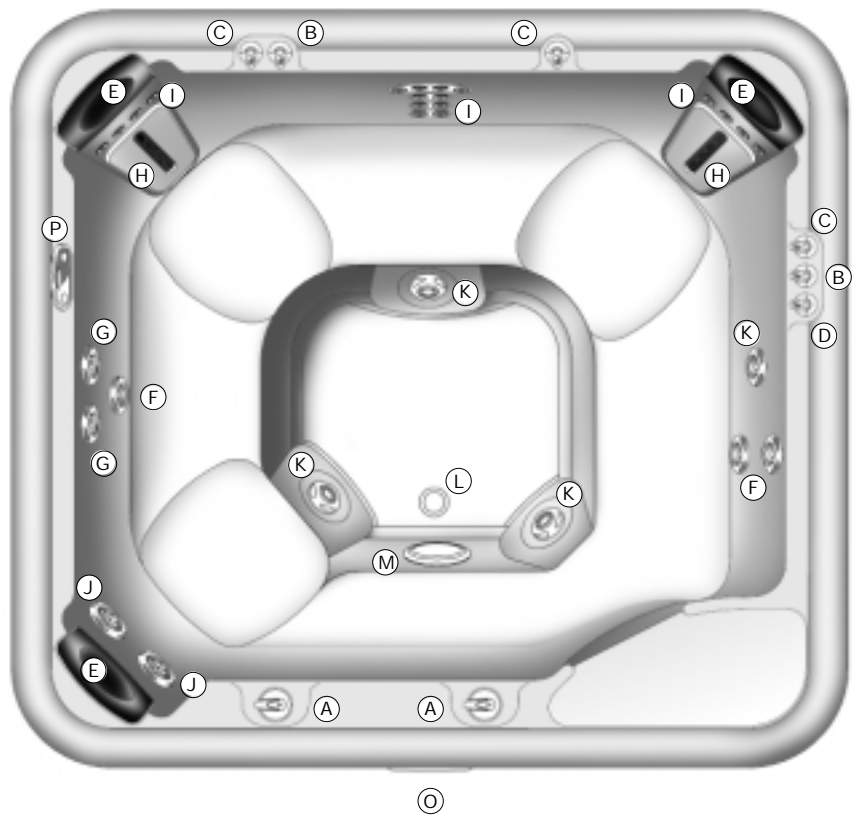


Watkins Manufacturing Corporation recommends that the Hot Spring® Spa be installed above ground. Lowering the top of the spa to ground level, or employing decking which raises standing level toward the top of the spa substantially increases the hazard of accidental entry. Consult a licensed building contractor to design or evaluate your custom decking requirements.

Grandee® Model G

OVERHEAD VIEW

- A. SmartJet® System Lever
- B. Moto-Massage® Jet Comfort Control® System Lever
- C. Precision™ Jets Comfort Control® System Lever
- D. JetStream® Jet Comfort Control® System Lever
- E. Pillow
- F. Hydromassage Jet with Directional Nozzle
- G. Hydromassage Jet with Rotary Nozzle
- H. Moto-Massage® Jet
- I. Precision™ Jets
- J. Soothing Seven® Jets
- K. JetStream® Jet
- L. Heater Return and Spa Drain
- M. Light Lens
- N. Filter Compartment
- O. Main Control Panel
- P. Auxiliary Control Panel



EQUIPMENT COMPARTMENT

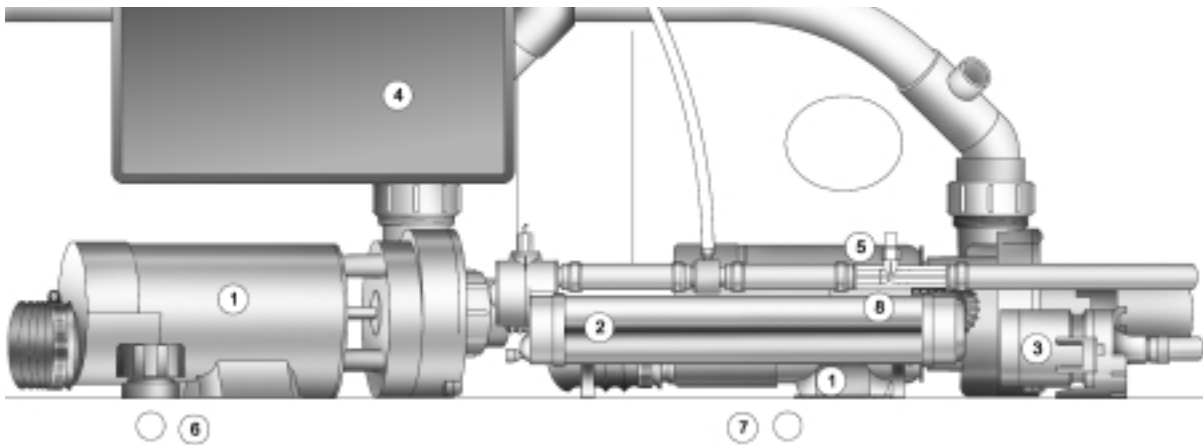
- 1. Wavemaster™ Jet Pump
- 2. No-Fault® 6000 Heater
- 3. Silent Flo 5000® Circulation Pump
- 4. IQ 2000™ Control Box
- 5. Ozone Injector (optional accessory)
- 6. Main Drain Valve
- 7. Secondary Drain
- 8. Heater Thermal Cut-off

Landmark® Model S

OVERHEAD VIEW



- A. SmartJet® System Lever
- B. JetStream® Jet Comfort Control System Lever
- C. Moto-Massage® Jet Comfort Control® System Lever
- D. Precision™ Jets Comfort Control® System Lever
- E. Pillow
- F. Hydromassage Jet with Directional Nozzle
- G. Hydromassage Jet with Rotary Nozzle
- H. Moto-Massage® Jet
- I. Precision™ Jets
- J. Soothing Seven® Jets
- K. JetStream® Jet
- L. Heater Return and Spa Drain
- M. Light Lens
- N. Filter Compartment
- O. Main Control Panel
- P. Auxiliary Control Panel



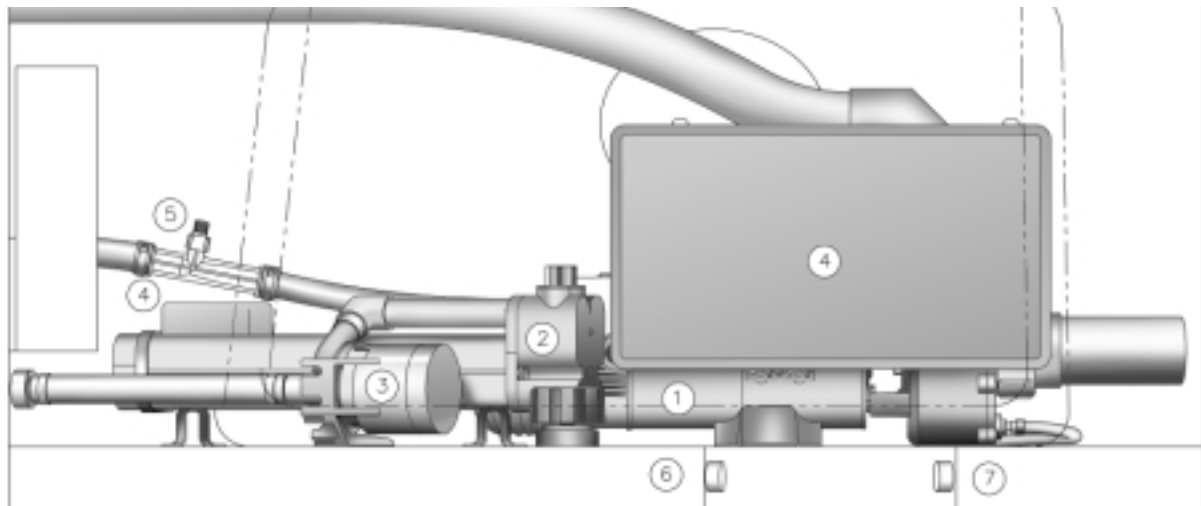
EQUIPMENT COMPARTMENT

- 1. Wavemaster™ Jet Pump
- 2. No-Fault® 6000 Heater
- 3. Silent Flo 5000® Circulation Pump
- 4. IQ 2000™ Control Box
- 5. Ozone Injector (optional accessory)
- 6. Main Drain Valve
- 7. Secondary Drain
- 8. Heater Thermal Cut-off

Classic® Model F

OVERHEAD VIEW

- A. SmartJet® System Lever
- B. Moto-Massage® Jet Comfort Control® System Lever
- C. Precision™ Jets Comfort Control® System Lever
- D. Pillow
- E. Hydromassage Jet with Directional Nozzle
- F. Hydromassage Jet with Rotary Nozzle
- G. Moto-Massage® Jet
- H. Precision™ Jets
- I. Soothing Seven® Jets
- J. JetStream® Jet
- K. Heater Return and Spa Drain
- L. Light Lens
- M. Filter Compartment
- N. Main Control Panel
- O. Auxiliary Control Panel



EQUIPMENT COMPARTMENT

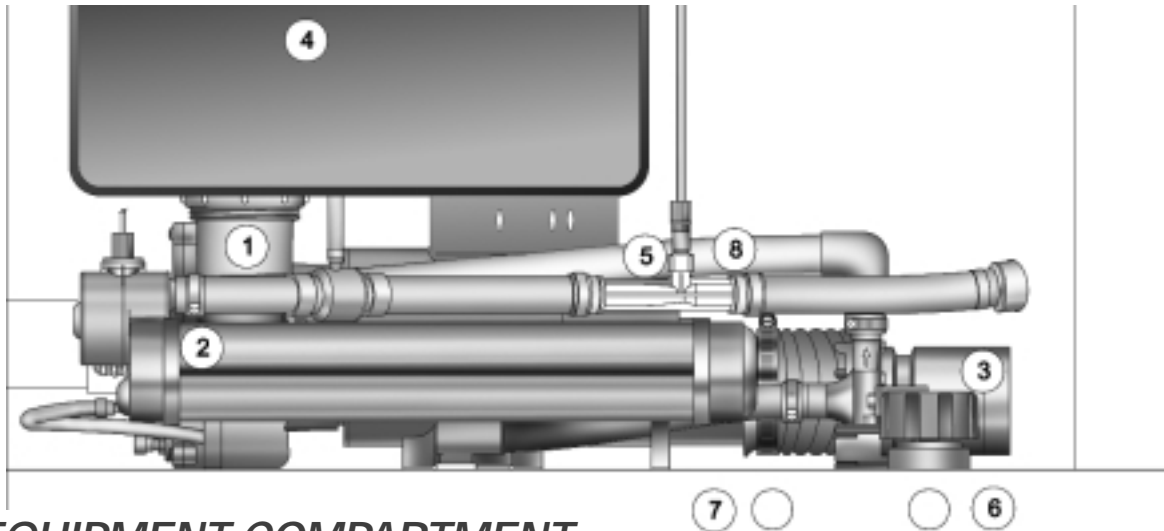
- 1. Wavemaster™ Jet Pump
- 2. No-Fault® 6000 Heater
- 3. Silent Flo 5000® Circulation Pump
- 4. IQ 2000™ Control Box
- 5. Ozone Injector (optional accessory)
- 6. Main Drain Valve
- 7. Secondary Drain
- 8. Heater Thermal Cut-off

Sovereign® Model I

OVERHEAD VIEW



- A. SmartJet® System Lever
- B. JetStream® Jet Comfort Control® System Lever
- C. Moto-Massage® Jet Comfort Control® System Lever
- D. Precision™ Jets Comfort Control® System Lever
- E. Pillow
- F. Hydromassage Jet with Directional Nozzle
- G. Hydromassage Jet with Rotary Nozzle
- H. Moto-Massage® Jet
- I. Precision™ Jets
- J. Soothing Seven® Jets
- K. JetStream® Jet
- L. Heater Return and Spa Drain
- M. Light Lens
- N. Filter Compartment
- O. Main Control Panel
- P. Auxiliary Control Panel



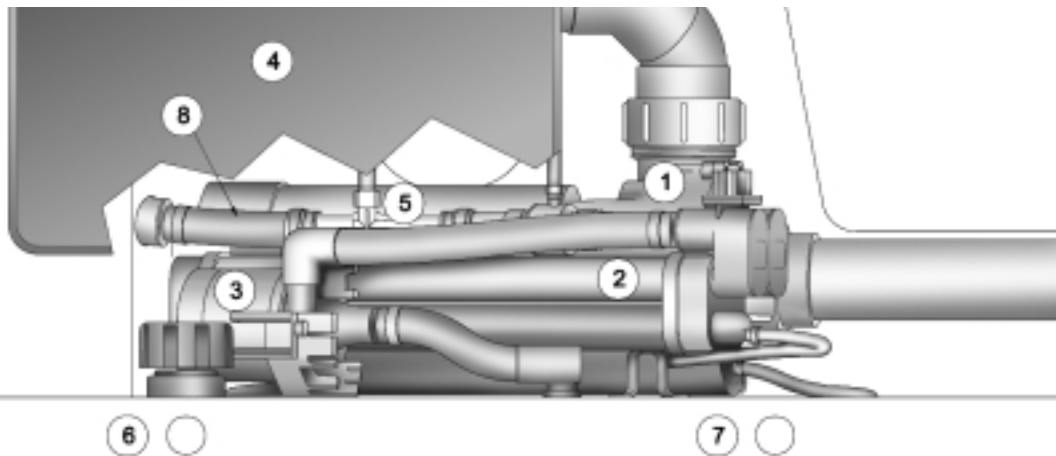
EQUIPMENT COMPARTMENT

- 1. Wavemaster™ Jet Pump
- 2. No-Fault® 6000 Heater
- 3. Silent Flo 5000® Circulation Pump
- 4. IQ 2000™ Control Box
- 5. Ozone Injector (optional accessory)
- 6. Main Drain Valve
- 7. Secondary Drain
- 8. Heater Thermal Cut-off

Prodigy® Model H

OVERHEAD VIEW

- A. SmartJet® System Lever
- B. JetStream® Jet Comfort Control® System Lever
- C. Precision™ Jets Comfort Control® System Lever
- D. Hydromassage Jet with Directional Nozzle
- E. Hydromassage Jet with Rotary Nozzle
- F. Precision™ Jets
- G. Soothing Seven® Jets
- H. JetStream® Jet
- I. Heater Return and Spa Drain
- J. Light Lens
- K. Filter Compartment
- L. Main Control Panel
- M. Auxiliary Control Panel



EQUIPMENT COMPARTMENT

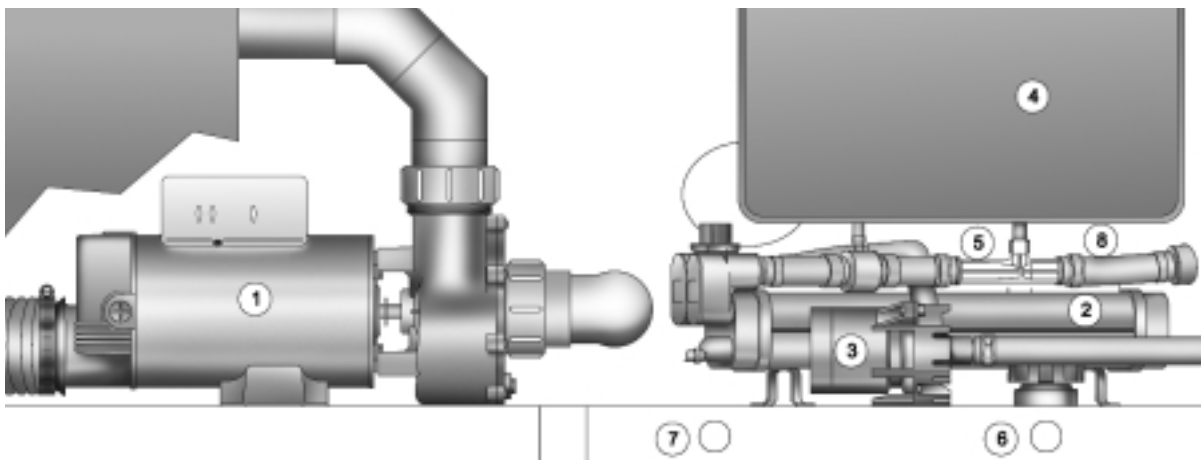
- 1. Wavemaster™ Jet Pump
- 2. No-Fault® 6000 Heater
- 3. Silent Flo 5000® Circulation Pump
- 4. IQ 2000™ Control Box
- 5. Ozone Injector (optional accessory)
- 6. Main Drain Valve
- 7. Secondary Drain
- 8. Heater Thermal Cut-off

Jetsetter® Model J



OVERHEAD VIEW

- A. SmartJet® System Lever
- B. JetStream® Jet Comfort Control® System Lever
- C. Moto-Massage® Jet Comfort Control® System Lever
- D. Precision™ Jets Comfort Control® System Lever
- E. Pillow
- F. Hydromassage Jet with Directional Nozzle
- G. Hydromassage Jet with Rotary Nozzle
- H. Moto-Massage® Jet
- I. Precision™ Jets
- J. Soothing Seven® Jets
- K. JetStream® Jet
- L. Heater Return and Spa Drain
- M. Light Lens
- N. Filter Compartment
- O. Main Control Panel



EQUIPMENT COMPARTMENT

- 1. Wavemaster™ Jet Pump
- 2. No-Fault® 6000 Heater
- 3. Silent Flo 5000® Circulation Pump
- 4. IQ 2000™ Control Box
- 5. Ozone Injector (optional accessory)
- 6. Main Drain Valve
- 7. Secondary Drain
- 8. Heater Thermal Cut-off

ELECTRICAL REQUIREMENTS AND PRECAUTIONS

Your Hot Spring® Spa has been designed carefully to give you maximum safety against electrical shock. Connecting the spa to an improperly wired circuit will negate many of the spa's safety features. Please read and follow the electrical installation requirements and instructions for your specific spa model completely!

SERVICE NOTE: All Hot Spring® Spa models are equipped with a power indicator which, in addition to showing the spa has power to it, has a diagnostic function as well. It will begin blinking if the heater high limit thermostat has tripped. If the power indicator light is blinking, follow the instructions in the troubleshooting section to identify and correct the cause. The power indicator will stop blinking once the problem has been corrected.

230 VOLT PERMANENTLY CONNECTED MODELS

- Grandee® (Model G)
- Landmark® (Model S)

HOT SPRING® SPAS MUST BE WIRED IN ACCORDANCE WITH ALL APPLICABLE LOCAL ELECTRICAL CODES. ALL ELECTRICAL WORK SHOULD BE DONE BY AN EXPERIENCED, LICENSED ELECTRICIAN. WE RECOMMEND THE USE OF APPROPRIATE ELECTRICAL CONDUIT, FITTINGS AND WIRE FOR ALL CIRCUITS.

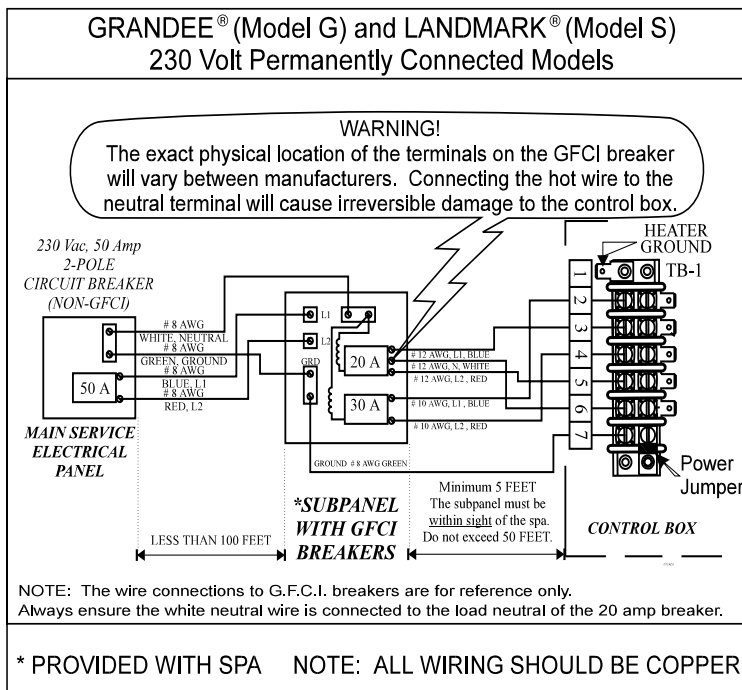
An electrical subpanel containing two GFCI breakers is included with each 230 volt spa. We recommend that this subpanel be used to supply power and protect the spa.

This subpanel requires a 50 amp, single phase, 230 volt, four wire service (two line, one neutral, one ground). The grounding conductor must be at least the same gauge as the line conductors, but not less than #8 AWG. A minimum #8 AWG solid copper bond wire is also required.

Mount the subpanel in the vicinity of the spa, but not closer than five feet away, in accordance with all local codes. (N.E.C. 680-6c)

INSTALLATION INSTRUCTIONS

1. To connect the electrical service, first remove the screws from the equipment compartment door. Carefully pull the door panel away and down in order to remove it completely from the spa.



2. Locate the IQ 2000™ Spa Control Box. Loosen the screws on the front of the control box. Remove the screws and the control box cover.
3. Route the electrical service from the subpanel into the spa equipment compartment. Position the conduit in the recess provided between the frame and door. Install the supply conduit so as not to block the drain valve.
4. **NOTE:** The subpanel must be placed in sight of the spa, at a minimum distance of five feet away.
5. Connect the supply conduit to the bottom of the IQ 2000™ Spa Control Box, using a minimum of 3/4" liquid-tight, flex conduit fittings.

WIRING CONNECTIONS

1. Identify the TB-1 terminal block, located inside the IQ 2000™ control box at the lower left-hand corner.
 2. Connect the #12 AWG, Blue wire, from the subpanel 20 amp breaker, terminal L1 to TB-1, terminal 3.
 3. Connect the #12 AWG, Red wire, from the subpanel 20 amp breaker, terminal L2 to TB-1, terminal 5.
 4. Connect the #12 AWG, White wire, from the subpanel 20 amp breaker, terminal N (load neutral) to TB-1, terminal 6.
- NOTE:** The white neutral wire must be attached to the LOAD neutral on the 230 volt, 20 amp breaker (not to the neutral

bus bar in the subpanel). The white neutral wire coming from the breaker itself is already connected to the neutral bus bar.

5. Connect the #10 AWG, Blue wire, from the subpanel 30 amp breaker, terminal L1 to TB-1, terminal 2.
6. Connect the #10 AWG, Red wire, from the subpanel 30 amp breaker, terminal L2 to TB-1, terminal 4.
7. Connect the #8 AWG, Green wire, from the subpanel GROUND bar to TB-1, terminal 7.
8. Using the pressure wire connector provided on the outside of the control box, bond the spa to all exposed metal equipment or fixtures, handrails, and the concrete pad (if applicable) per N.E.C. Article 680 and local codes.
9. Replace the control box cover and securely tighten the fastening screws. Close and secure the equipment compartment door.

WARNING: Fill the spa with water **before** turning on the power.

Once your spa has been filled with water, turn it on and test all the circuit breakers.

NOTE: If both breakers immediately trip, verify that the #12 AWG White neutral wire is connected from TB-1 terminal 6 to the L1 (load neutral) terminal of the 20 amp subpanel breaker. Each breaker should be tested monthly. Here's how:

1. Push the "Test" button on each GFCI breaker, and observe it click off.
2. Wait 30 seconds, then push the breaker switch to the OFF (down) position (to ensure that it has completely disengaged), then push the breaker switch to the ON (up) position. If you don't wait 30 seconds, the spa's power indicator may continue to blink-try again.

If any of the GFCI breakers fails to operate in this manner, your spa may have an electrical malfunction, and you may be risking electrical shock. Turn off all circuits and do not use the spa until the problem has been corrected by an authorized service agent.

WARNING: Removing or bypassing any GFCI breaker will result in an unsafe spa and will void the spa's warranty.

IMPORTANT: Should you ever move your spa, follow these installation instructions completely.

NOTE: Long wiring runs may require larger-gauge wire than stated. We recommend using a maximum 3% voltage drop when calculating wire gauge requirements.

115-230 VOLT CONVERTIBLE MODELS

- *Classic® (Model F)*
- *Prodigy® (Model H)*
- *Sovereign® (Model I)*
- *Jetsetter® (Model J)*

230 VOLT CONVERSION INSTRUCTIONS

Refer to the following instructions to convert a 115 volt spa to a 230 volt spa.

NOTE: Converting the spa to 230 volt operation should only be done by an authorized service agent or a qualified electrician.

Required Parts: (3) P.N. 36021 Program Jumpers (staged on JP jumpers in IQ 2000™ control box) and (1) P.N. 20679 or 37087 Subpanel (230 Volt)

1. Disconnect the power cord from the house receptacle.
2. Remove the screws and open the equipment compartment door.
3. Remove the screws on the front of the IQ 2000™ Spa Control Box.
4. Open the control box cover.
5. Identify TB-1, located in the lower left-hand corner inside the control box.
6. Refer to Figure 1, item A. Loosen the screws on the TB-1 terminals 2 and 3. Remove the metal jumper from TB-1 connecting terminals 2 and 3. Tighten the screws after jumper removal.
7. Refer to Figure 1, item A. Loosen the screws on the TB-1 terminals 4 and 5. Remove the metal jumper from TB-1 connecting terminals 4 and 5. Tighten the screws after jumper removal.
8. Refer to Figure 1, item B. Remove the power cord wires from terminals 3, 5, and 7.
9. Unscrew the power cord strain relief and remove the power cord from the access hole in the control box.
10. On the large circuit board, locate the program jumpers, JP-1 through JP-4 (positioned near the center of the circuit board, below the largest IC chip).

WARNING: Do not allow pliers to contact any electronic components inside the control box.

11. Use a pair of needlenose pliers to place the program jumpers as shown in Figure 2 (use Watkins P.N. 36021).

NOTE: The program jumpers JP-1, JP-2, JP-3 and JP-4 must be set correctly for the spa to operate.

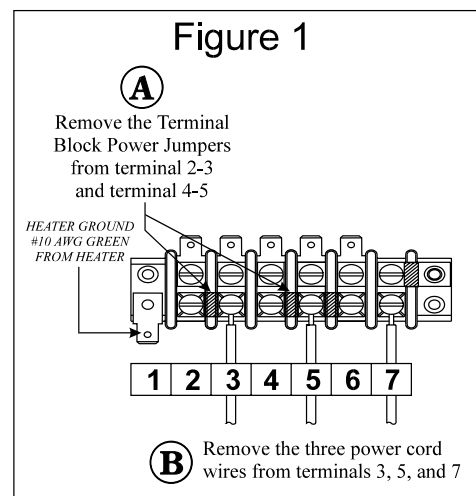
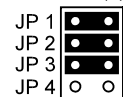


Figure 2

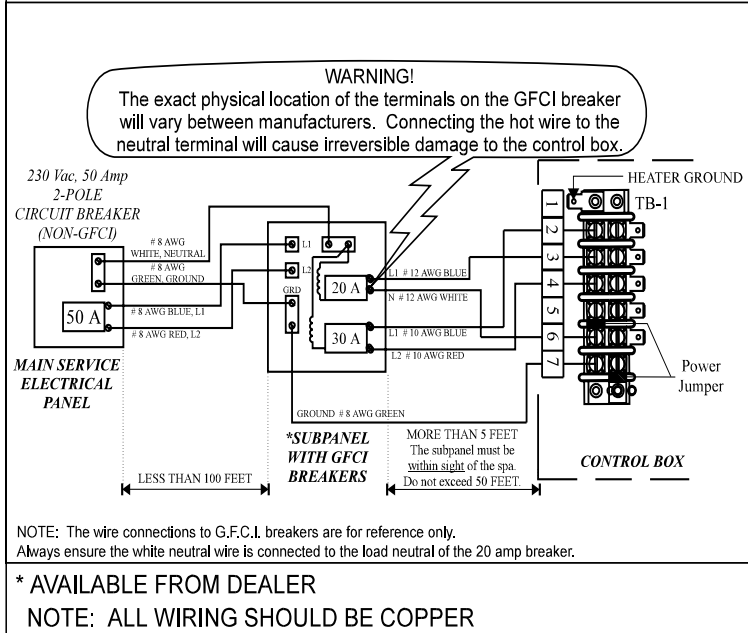
230 Vac Models
Classic (F)
Prodigy (H)
Sovereign (I)
Jetsetter (J)



INSTALLATION INSTRUCTIONS

1. To connect the electrical service, first remove the screws from the equipment compartment door. Carefully pull the door panel away and remove it from the spa.
2. Locate the IQ 2000™ Spa Control Box. Loosen the screws on the front of the control box. Remove the screws and the control box cover.

230 Volt Converted Models, Classic® (Model F), Sovereign® (Model I), Prodigy® (Model H), and Jetsetter® (Model J)



3. Route the electrical service from the subpanel into the spa equipment compartment. Position the conduit in the recess provided between the frame and the door.

NOTE: The subpanel must be placed in sight of the spa, at a minimum distance of 5 feet away.

4. Connect the supply conduit to the bottom of the IQ 2000™ Spa Control Box, using a minimum of 3/4" liquid-tight, flex conduit fittings.

WIRING CONNECTIONS

1. Identify the TB-1 terminal block, located at the lower left-hand corner of the control box.
2. Connect the #12 AWG, Blue wire from the subpanel 20 Amp breaker, terminal L1 to TB-1 terminal 3.
3. Connect the #12 AWG, White wire from the subpanel 20 Amp breaker, terminal N (load neutral) to TB-1, terminal 6.

NOTE: The white neutral wire must be attached to the load neutral on the 115 Volt, 20 amp breaker (not the neutral bus bar in the subpanel). The white neutral wire from the 20 amp breaker is already connected to the neutral bus bar.

4. Connect the #10 AWG, Blue wire from the subpanel 30 Amp breaker, terminal L1 to TB-1, terminal 2.
5. Connect the #10 AWG, Red wire from the subpanel 30 Amp breaker, terminal L2 to TB-1, terminal 4.
6. Connect the #8 AWG, Green wire from the subpanel ground bar to TB-1 terminal 7.
7. Bond the spa to all exposed metal equipment or fixtures, handrails, and concrete pad per N.E.C. Article 680 and all local codes.
8. Replace the control box cover and securely tighten the fastening screws. Close and secure the equipment compartment door.

WARNING: Fill the spa with water **before** turning on the power.

Once your spa has been filled with water, turn it on and test all the circuit breakers.

NOTE: If both breakers immediately trip, verify that the #12 AWG White neutral wire is connected from TB-1 terminal 6 to the L1 (load neutral) terminal of the 20 amp subpanel breaker. Each breaker should be tested monthly. Here's how:

1. Push the "Test" button on each GFCI breaker, and observe it click off.
2. Wait 30 seconds, then push the breaker switch to the OFF (down) position (to ensure that it has completely disengaged), then push the breaker switch to the ON (up) position. If you don't wait 30 seconds, the spa's power indicator may continue to blink-try again.

If any of the GFCI breakers fails to operate in this manner, your spa may have an electrical malfunction, and you may be risking electrical shock. Turn off all circuits and do not use the spa until the problem has been corrected by an authorized service agent.

ELECTRICAL REQUIREMENTS FOR 115 VOLT OPERATION

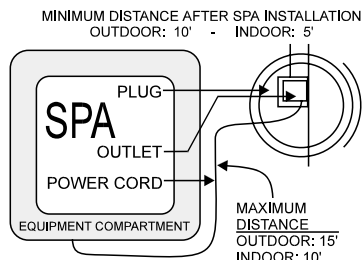
The spa must be connected to a dedicated 115 volt, 20 amp, GFCI protected, grounded circuit. The term "dedicated" means the electrical circuit is not being used or shared for any other electrical items (patio lights, appliances, garage circuits, etc.). If the spa is connected to a non-dedicated circuit, overloading will result in "nuisance tripping" at the main panel. This requires frequent resetting of the breaker switch at the house electrical breaker panel and introduces the possibility of damage or failure of spa equipment. The dedicated circuit must be properly wired; that is, it must have a

20 amp GFCI circuit breaker in the house breaker panel, #12 AWG or larger wire (including the ground wire) and the correct polarity throughout the circuit.

NEVER CONNECT THE SPA TO AN EXTENSION CORD!

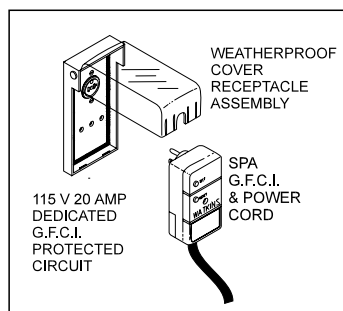
A pressure wire connector is provided on the exterior surface of the control box, inside the spa. This is to permit the connection of a ground bonding wire between this point and any metal equipment, enclosures, reinforced concrete pad, pipe or conduit within 5 feet of the spa (if needed to comply with local building code requirements). The bonding wire must be at least a #8 AWG solid copper wire.

Bond the spa to all exposed metal equipment or fixtures, handrails, and concrete pad per N.E.C. Article 680 and all local codes.



INSTALLATION INSTRUCTIONS

All 115 volt Hot Spring® Spa models come equipped with approximately 15 feet of useable power cord (this is the maximum length allowed by Underwriters Laboratory and the National Electric Code). When the spa is installed, the power cord (on the redwood skirted models) will come out of the bottom of the equipment compartment door. On the Classic® Spa, the power cord should be removed from the equipment compartment and brought out under the spa skirt (directly below the compartment door) before the spa is filled with water. For your safety, when the electrician is installing the 20 amp single electrical outlet and waterproof cover outdoors, it should be no closer than 10 feet and no farther than 15 feet from the spa. If the spa is being installed indoors, the outlet should be no closer than 5 feet and no farther than 10 feet from the spa [reference National Electrical Code 680-6a(1) and 680-41a].



The Ground Fault Circuit Interrupter (GFCI) is located at the end of the power cord. This device is for your protection. It is very important to protect it from rain and other moisture. Once a month, with the plug connected to the power supply,

1. Push the "Test" button on the GFCI breaker. The spa should stop operating and the GFCI power indicator will go out.
2. Wait 30 seconds, then push the "Reset" button. Power will be restored to the spa and the GFCI power indicator will turn on.

If the GFCI fails to operate in this manner, your spa may have an electrical malfunction, and you may be risking electrical shock. Turn off all circuits and do not use the spa until the problem has been corrected by an authorized service agent.

WARNING: Removal of the GFCI from the spa's power cord will result in an unsafe spa and will void the spa's warranty.

IMPORTANT: Should you ever move your spa, follow these installation instructions completely.

NOTE: Long wiring runs may require larger-gauge wire than stated. We recommend using a maximum 3% voltage drop when calculating wire gauge requirements.

IV. OPERATING INSTRUCTIONS

Hot Spring® Spas are manufactured in two different electrical versions, 230 volt permanently connected, and 115 / 230 volt convertible models. The largest spa models, the Grandee® and the Landmark®, are available only as 230 volt permanently connected models (these spas can not be converted to 115 volt systems), and utilize a continuous heating system. This means that the heater may turn on while the jet pump is operating, unlike 115 volt models where the heater will automatically be turned off when the jet pump is turned on.

The remaining spa models, the Classic®, Sovereign®, Prodigy® and Jetsetter®, are available as 115V / 230V convertible systems, meaning that a 115 volt model can be converted to a 230 volt model. The benefit of operating in 230 volt mode is an increase in the wattage (heater capacity) of the heater, allowing the heater to run when the jet pump is operating, which keeps your water hotter longer when the jets are in use. **Contact your authorized Hot Spring® Spa dealer for the requirements to convert between electrical systems at your home.**

IMPORTANT: Improper conversion from one system to another may damage the spa's electrical components. Always consult your authorized dealer prior to converting from one electrical system to another.

230 VOLT PERMANENTLY CONNECTED MODELS

- **Grandee® (Model G)**
- **Landmark® (Model S)**

The 230 volt permanently connected models come with a subpanel which contains two GFCI circuit breakers - a 20 amp / 230 volt GFCI circuit breaker for the jet pump and control circuit and a 30 amp / 230 volt GFCI circuit breaker for the heating system. The subpanel and spa must be "hardwired" by a licensed electrician using appropriate wire, conduit and fittings.

The Grandee®'s and Landmark®'s dual 1.65 HP Wavemaster™ 7000 jet pumps allow you to operate each half of the jet system separately, or both halves simultaneously. Each half of the jet system has two different jet menus which are selected by the individual SmartJet® levers. This feature allows you to select any one of four menus or a combination of menus when using the spa.

The Grandee® and Landmark® are equipped with a No-Fault® 6000 stainless steel, high watt density heater. The heating system consists of a 6,000 watt (6 kW) heater, an energy efficient low-flow circulation pump, and a high limit thermostat and heater thermal cut-off for protection of user and equipment.

In each of these spas, the heater will turn on while the jet pump is operating (after a 1-1/2 degree temperature drop) to help maintain the water temperature during spa use. Factors such as the number of people using the spa, the air temperature and the length of time the pump is operated will affect the heating system's ability to maintain the water temperature.

115/230 VOLT CONVERTIBLE MODELS

- **Classic® (Model F)**
- **Prodigy® (Model H)**
- **Sovereign® (Model I)**
- **Jetsetter® (Model J)**

The 115 / 230 volt convertible Hot Spring® Spa models come configured with a familiar 115 volt electrical system, with a GFCI plug at the end of a cord. The GFCI plug contains a GFCI breaker for user and equipment protection. The 115 volt configuration requires a dedicated outlet to supply power to the spa.

These models can be converted to 230 volt operation with the addition of a subpanel and a control box wiring change. Consult your dealer before attempting to convert from 115 volt operation to 230 volt operation. Any damage to the spa from improper conversion is not covered under the warranty.

In the 115 volt configuration, either the heater or the jet pump can operate, but they can't work at the same time. In a 115 volt system, as long as the jet pump is activated, the heater will not turn on. On the other hand, when the spa is converted to operate in the 230 volt configuration, the heater and jet pump can operate simultaneously.

Each convertible spa model is equipped with a No-Fault® 6000 stainless steel, high watt density heater. The heater will operate at 1500 watts when the spa is configured as a 115 volt cord-and-plug connected model and at 6000 watts when the spa is configured as a 230 volt converted model. The heating system consists of the No-Fault® 6000 heater, an energy-efficient low-flow circulation pump, and a high limit thermostat and heater thermal cut-off for user and equipment protection.

All four of these models feature a Wavemaster™ jet pump to operate their jet systems. The Classic®, Sovereign® and Prodigy® models use the 1.65 HP Wavemaster™ 7000, while the Jetsetter® spa uses the 1.5 HP Wavemaster™ 5000. The SmartJet® lever is used to operate the jet menus available in these models.

START-UP PROCEDURES

The water level of your Hot Spring® Spa should be maintained approximately four inches below the top of the spa.

CAUTIONS:

- Do not fill the spa with hot water, as tripping of the high limit thermostat may result.
 - Do not connect power to an empty spa.
 - Before using your spa after filling, "super-chlorinate" or "shock" the spa water to ensure all bacteria and contaminants have been oxidized. See the Water Quality and Maintenance section.
1. Close all drains and fill the spa with water through the filter compartment.
HINT: Use the FreshStart™_{10,000} Pre-filter to remove unwanted contaminants from the tap water. See the Water Quality and Maintenance section for additional information.
NOTE: Watkins Manufacturing Corporation does not recommend the spa be filled with "softened" water, as this may damage the spa's equipment.
 2. Once the spa has been filled with water and the equipment compartment door is secured, power must be applied to the spa:
115 Volt Models - Connect the GFCI to the waterproof receptacle.
230 Volt Models - Open the door of the electrical subpanel and reset the two GFCI breakers. Close and secure the subpanel door.
 3. The jet pump(s), heating system, and all internal plumbing will prime automatically as the spa is filled with water. To check the operation of the jet system and purge any remaining air from the heating system, push in the Jets button (Jets 1 button, also the Jets 2 button for the Grandee® and Landmark®) and wait one minute. Once the jet system is fully operational (as indicated by strong, non-surging jets), priming of the spa is complete.

IMPORTANT: Be sure the air control valves are open by turning each one clockwise (to the right) and check to see that the SmartJet® Lever is pointing to the 9 o'clock position (see illustration in SmartJet® System section).

SERVICE NOTES: If there is a large pocket of air trapped in the circulation pump plumbing after filling the spa with water, the heater thermal cut-off may trip when the heater is energized. The air lock will eventually cause the circulation pump's thermal overload to trip and shut down the pump as well. The circulation pump will start up automatically once it has cooled. You'll need to remove the air lock and reset the heater thermal cut-off. See the Service Information section for details.

Weak or surging jets are an indication of a low water level condition or clogged filter cartridges.

4. Adjust Total Alkalinity (TA), Calcium Hardness (CH), then spa water pH and finally sanitize the spa water following the procedures listed in the Water Quality and Maintenance section. The jet button marked "Clean" should be used for the 10 minute "super-chlorination" or "shock treatment."

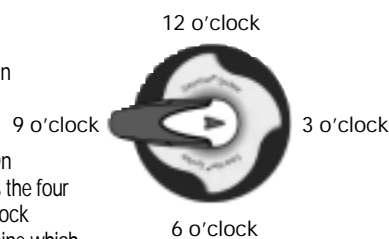
OPERATION NOTE: Make sure you adjust your Total Alkalinity first, as an out-of-balance condition will affect your ability to adjust the pH correctly, and will prevent the sanitizer from operating effectively.

5. Once the spa plumbing and pumps have been primed, the water sanitized, and the jet pump has shut off, the cover may be put on the spa. Always secure the cover in place using the cover coverlocks whenever the spa is not being used.
6. The spa temperature is pre-programmed to reach 102°F, and will normally do so within 18 to 24 hours. You may raise the water temperature by pressing the TEMP (+) button on the control panel, or lower it by pressing the TEMP (-) button. After a few hours to heat or cool, the water temperature will remain within 1-1/2 degrees of your selected temperature. To prevent tampering, you can lock your desired temperature setting. Refer to the Control Panel section for details.

SMARTJET® SYSTEM

With your Hot Spring® Spa's exclusive SmartJet® System, you can control the massaging action of your spa. Using the SmartJet® lever, the jets are activated in sets, known as jet systems.

On the Grandee®, Landmark®, and Jetsetter®, each SmartJet® lever controls two jet systems. On the Classic®, Sovereign®, and Prodigy®, the single SmartJet® lever has four positions to access the four jet systems. The jet systems are selected by turning the SmartJet® lever to the 3, 6, 9 or 12 o'clock position (facing the spa). Please consult the jet system menus on the following pages to determine which jets are activated with each SmartJet® lever position. Or just jump in and play—turn the lever(s) and see what happens.

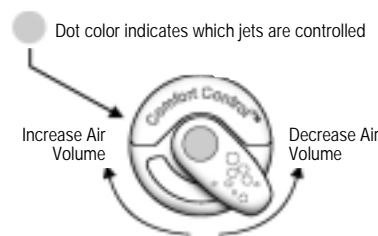


COMFORT CONTROL® SYSTEM

The Comfort Control® system allows you to control the intensity of the massage at each jet by adjusting the mixture of air and water. Jets with an adjustable faceplate are controlled by turning the faceplate clockwise for a stronger flow, counterclockwise for a softer flow. Jets without an adjustable faceplate are controlled by a Comfort Control® lever. The Precision™ Jets are controlled by Dark Teal, Forest Green or Blue Comfort Control® levers. The Moto-Massage® Jet is controlled by Seafoam Green or Light Gray Comfort Control® levers. The JetStream® Jet is controlled by a Steel Blue or Dark Gray lever.

NOTE: The intensity of the JetStream® Jets in the footwell can not be altered.

Turn the Comfort Control® lever clockwise to increase the intensity of the jet and counterclockwise to decrease the intensity.



JETS

MOTO-MASSAGE® JET (Not available on Prodigy®)

The Moto-Massage® Jet automatically travels up and down in a sweeping motion, simulating the natural stroking effects of a manual massage. The intensity and speed of the Moto-Massage® Jet may be adjusted by turning the Comfort Control® lever with the Seafoam Green or Light Gray dot.

The Moto-Massage® Jet has been factory adjusted to provide maximum hydromassage, and to achieve full vertical travel with its Comfort Control® lever in the full air volume position. Should the Moto-Massage® Jet not achieve full vertical travel and the problem is not a closed air control valve or clogged filter cartridge, then your Hot Spring® Spa service center should be contacted.

SERVICE NOTE: A slow or non-moving Moto-Massage® Jet may indicate that the filter cartridge pores are obstructed with dirt, body oils, or calcification. Follow the filter cartridge cleaning procedures in the Spa Care and Maintenance section of this manual.

ACCESSORY NOTE: For a different-feeling massage, ask your dealer about the HydroPulse™ option, an alternative faceplate for your Moto-Massage® Jet.

HYDROMASSAGE JETS

The Hydromassage jets have two different nozzle options: Directional and Dual Port Rotary. The Directional nozzle allows you to aim the water in the direction that feels best. The Dual Port Rotary nozzle divides the water flow into two streams, and then spins.

ACCESSORY NOTE: Your Hot Spring® dealer stocks Hydromassage Jet Kits which can easily be installed in your spa to modify your jets from Directional to Dual Port Rotary.

SOOTHING SEVEN® JET

The Soothing Seven® Jet is another unique feature of Hot Spring® Spas. Its seven outlets are designed to massage the muscles in the upper back and shoulders, gently and thoroughly. Turn the faceplate clockwise to increase the jet pressure and counterclockwise to decrease the jet pressure.

PRECISION™ JETS

Precision™ Jets are located above all Moto-Massage® Jets and in groups of ten in the Grandee®, Landmark®, Sovereign®, Classic® and Prodigy® models. They are designed to perform a soft, soothing massage on your back and shoulders.

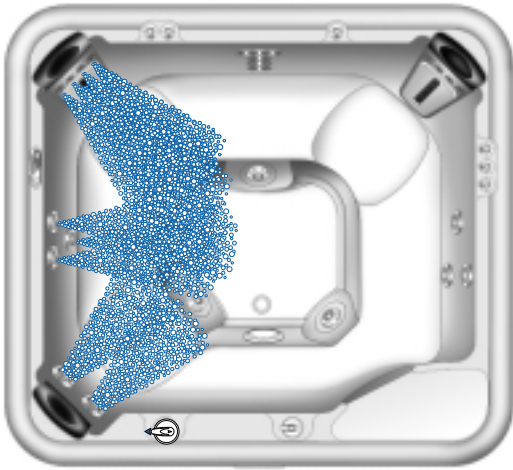
Adjust the pressure of the Precision™ Jets using the Comfort Control® lever with the Dark Teal, Forest Green or Blue dot (located closest to the Precision™ Jets).

Refer to the drawings on the following pages to familiarize yourself with the SmartJet® System menus for your spa. Please note that the SmartJet® lever side of the spa is always considered the front when referring to the locations of the different types of jets and jet systems. **The clock positions are correct when facing the spa, standing at the SmartJet® lever.**

JETSTREAM® JET

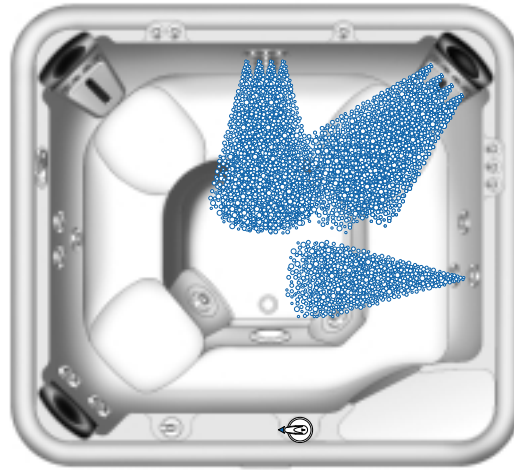
The JetStream® Jet is a large orifice hydromassage jet designed to put maximum massaging action on a specific area of the body. It is located in the lower part of the spa to afford optimal access for the massaging of feet, legs, hips and lower back. The intensity of the JetStream® Jets can be altered (except the ones located in the footwell) using the Comfort Control® lever with the Steel Blue or Dark Gray lever. JetStream® Jets located in the footwell are not adjustable.

Grandee® (Model G) Jet System Menu



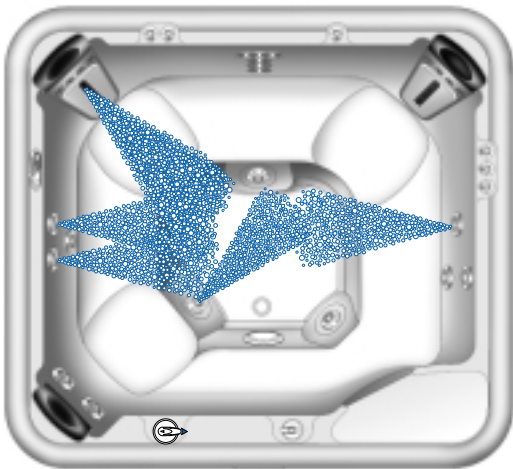
Left Jet Pump-Jet System 1 Left SmartJet® Lever in the 3 o'clock position

- 1 Moto-Massage® Jet on left rear
- 4 Precision™ Jets above left Moto-Massage® Jet
- 3 Jet-Cluster™ System on left wall (1 Directional Hydromassage, 2 Dual Port Rotary)
- 2 Soothing Seven® Jets on front left



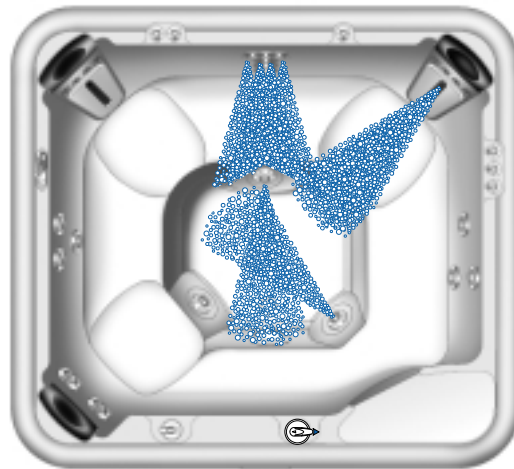
Right Jet Pump-Jet System 1 Right SmartJet® Lever in the 3 o'clock position

- 1 Moto-Massage® Jet on right rear
- 4 Precision™ Jets above right Moto-Massage® Jet
- 10 Precision™ Jets on back wall
- 2 Stacked Directional Hydromassage Jets on right wall



Left Jet Pump-Jet System 2 Left SmartJet® Lever in the 9 o'clock position

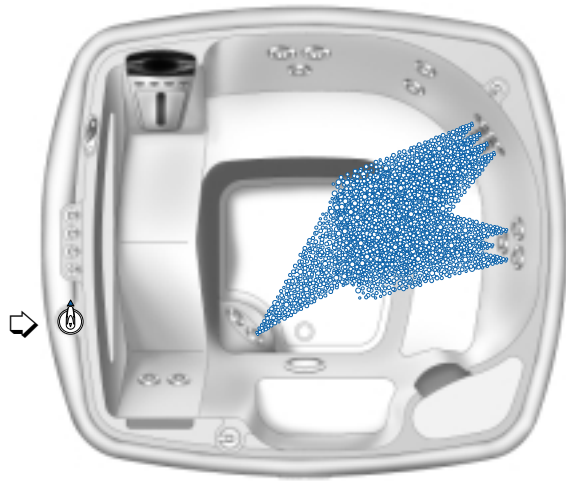
- 1 Moto-Massage® Jet on left rear
- 1 JetStream® Jet in footwell
- 2 Hydromassage Jets on left wall (Dual Port Rotary)
- 1 JetStream® Jet on right wall



Right Jet Pump-Jet System 2 Right SmartJet® Lever in the 9 o'clock position

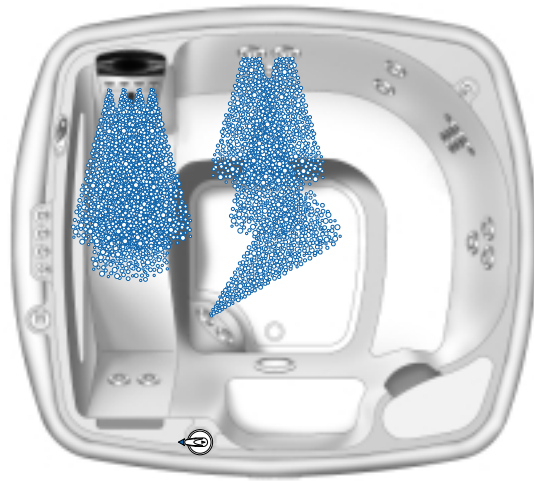
- 1 Moto-Massage® Jet on right rear
- 10 Precision™ Jets on back wall
- 2 JetStream® Jets in footwell

Landmark® (Model S) Jet System Menu



Left Jet Pump–Jet System 1
Left SmartJet® Lever in the 3 o'clock position

- 10 Precision™ Jets on right rear
- 1 JetStream® Jet in footwell
- 3 Jet-Cluster™ System on right wall (2 Dual Port Rotary, 1 Directional Hydromassage)



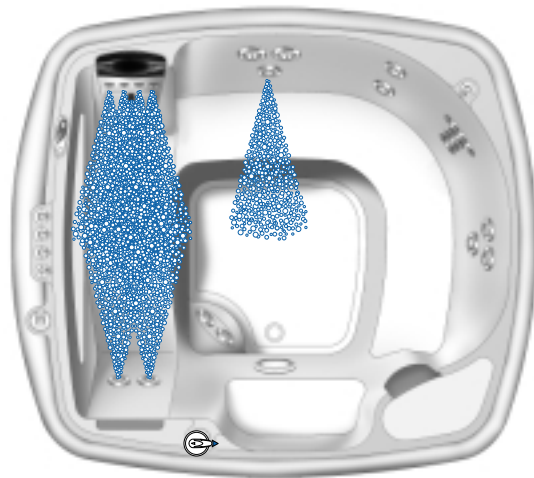
Right Jet Pump–Jet System 1
Right SmartJet® Lever in the 3 o'clock position

- 1 Moto-Massage® Jet on left rear
- 4 Precision™ Jets above Moto-Massage® Jet
- 3 Jet-Cluster™ Systems on back wall (1 Directional Hydromassage, 2 Soothing Seven® Jets)
- 1 JetStream® Jet in footwell



Left Jet Pump–Jet System 2
Left SmartJet® Lever in the 9 o'clock position

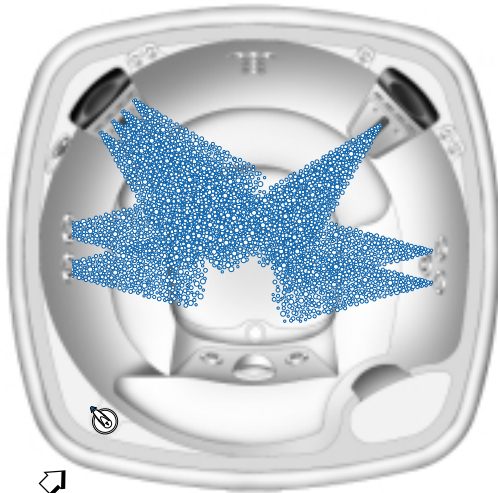
- 2 Stacked Directional Hydromassage Jets on back wall
- 1 JetStream® Jet in footwell
- 3 Jet-Cluster™ System on right wall (2 Dual Port Rotary, 1 Directional Hydromassage)



Right Jet Pump–Jet System 2
Right SmartJet® Lever in the 9 o'clock position

- 1 Moto-Massage® Jet on left rear
- 4 Precision™ Jets above Moto-Massage® Jet
- 2 JetStream® Jets in lounge
- 1 Directional Hydromassage on back wall

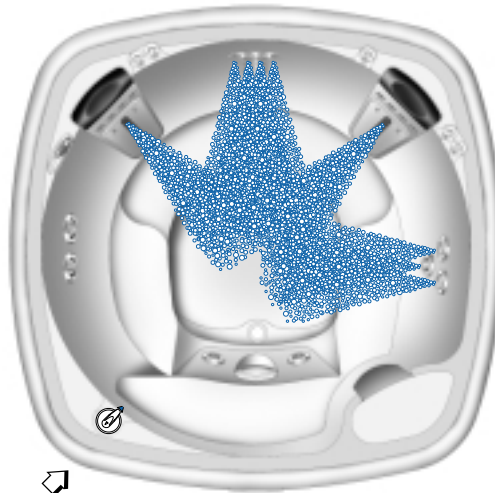
Classic® (Model F) Jet System Menu



Jet System 1

SmartJet® Lever in the 3 o'clock position

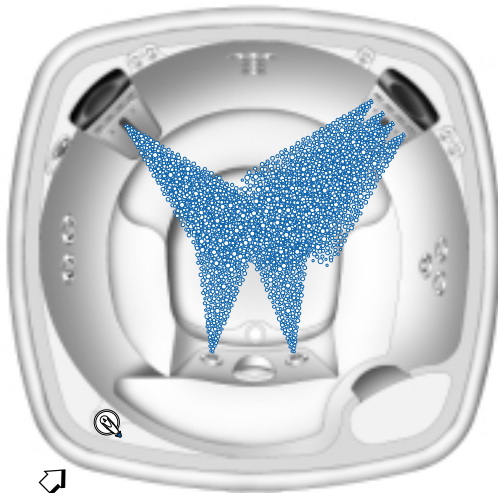
- 1 Moto-Massage® Jet on left rear
- 1 Moto-Massage® Jet on right rear
- 4 Precision™ Jets above left Moto-Massage® Jet
- 2 Dual Port Rotary Jets on right wall
- 2 Soothing Seven® Jets on left wall



Jet System 2

SmartJet® Lever in the 6 o'clock position

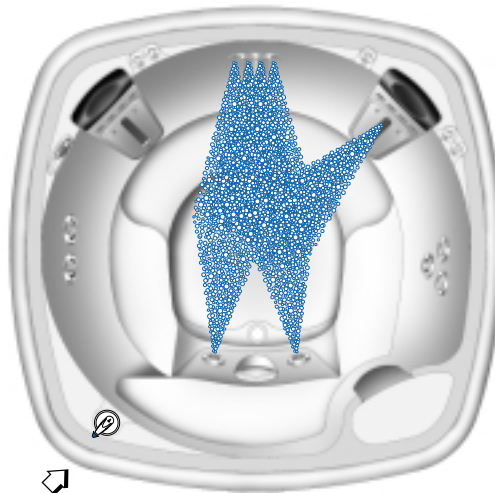
- 1 Moto-Massage® Jet on left rear
- 1 Moto-Massage® Jet on right rear
- 10 Precision™ Jets on back wall
- 3 Jet-Cluster on right wall (2 Dual Port Rotary, 1 Directional Hydromassage)



Jet System 3

SmartJet® Lever in the 9 o'clock position

- 1 Moto-Massage® Jet on left rear
- 1 Moto-Massage® Jet on right rear
- 4 Precision™ Jets above right Moto-Massage® Jet
- 2 JetStream® Jets in footwell

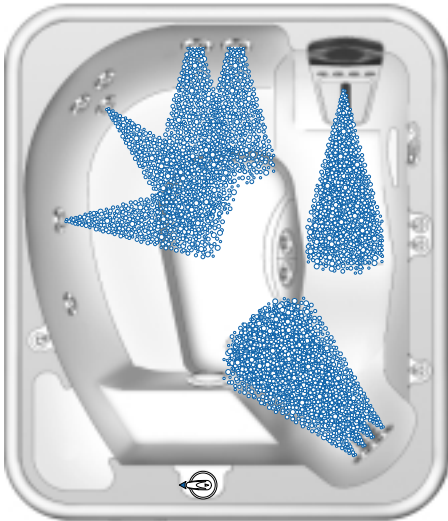


Jet System 4

SmartJet® Lever in the 12 o'clock position

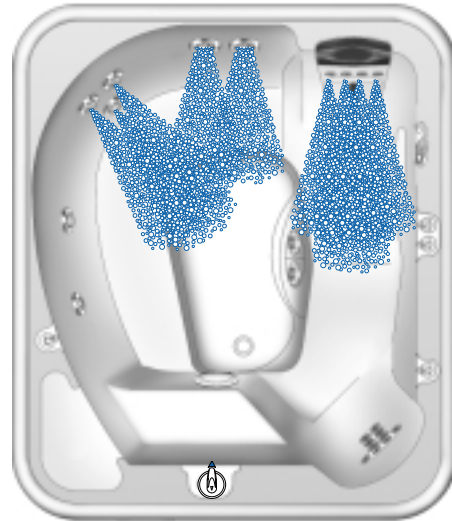
- 1 Moto-Massage® Jet on right rear
- 10 Precision™ Jets on back wall
- 2 JetStream® Jets in footwell

Sovereign® (Model I) Jet System Menu



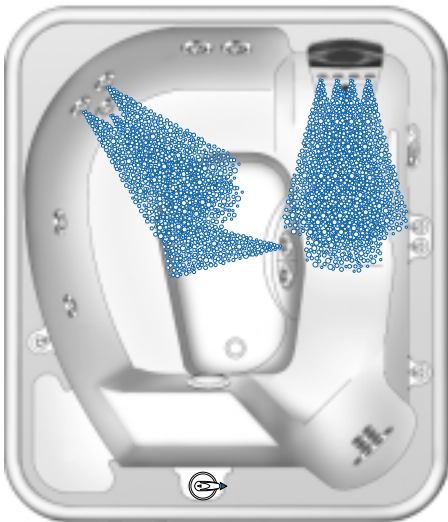
Jet System 1
SmartJet® Lever in the 3 o'clock position

- 1 Moto-Massage® Jet on right rear
- 10 Precision™ Jets on front right
- 2 Soothing Seven® Jets on back wall
- 2 Directional Hydromassage Jets on left wall



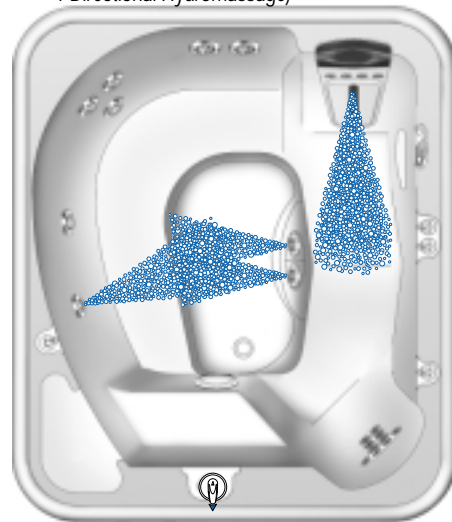
Jet System 2
SmartJet® Lever in the 6 o'clock position

- 1 Moto-Massage® Jet on right rear
- 4 Precision™ Jets above Moto-Massage® Jet
- 2 Soothing Seven® Jets on back wall
- 3 Jet-Cluster™ System on left wall (2 Dual Port Rotary, 1 Directional Hydromassage)



Jet System 3
SmartJet® Lever in the 9 o'clock position

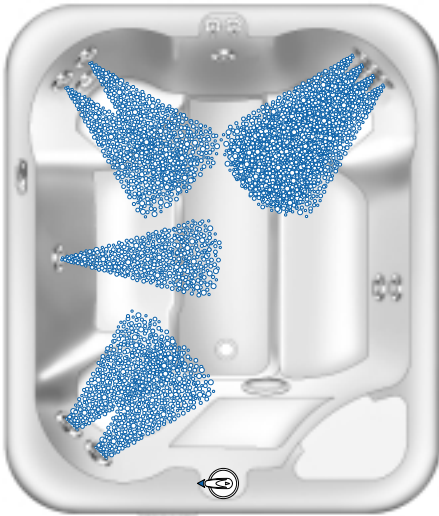
- 1 Moto-Massage® Jet on right rear
- 4 Precision™ Jets above Moto-Massage® Jet
- 1 JetStream® Jet in footwell
- 3 Jet-Cluster™ System on left wall (2 Dual Port Rotary, 1 Directional Hydromassage)



Jet System 4
SmartJet® Lever in the 12 o'clock position

- 1 Moto-Massage® Jet on right rear
- 1 JetStream® Jet on left wall
- 2 JetStream® Jets in footwell

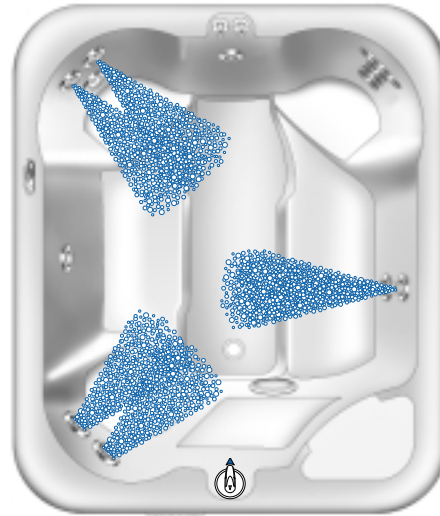
Prodigy® (Model H) Jet System Menu



Jet System 1

SmartJet® Lever in the 3 o'clock position

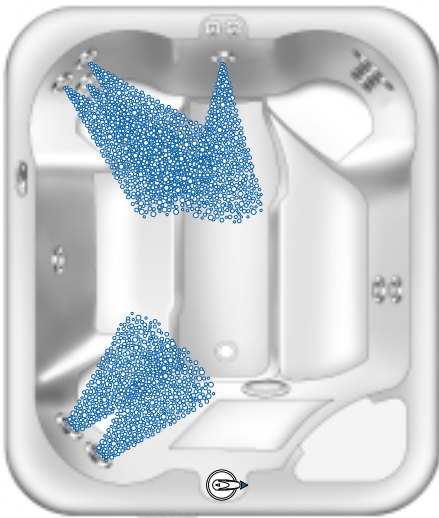
- 2 Soothing Seven® Jets on front left
- 10 Precision™ Jets on right rear
- 1 Directional Hydromassage Jet on left wall
- 2 Dual Port Rotary Jets on left rear



Jet System 2

SmartJet® Lever in the 6 o'clock position

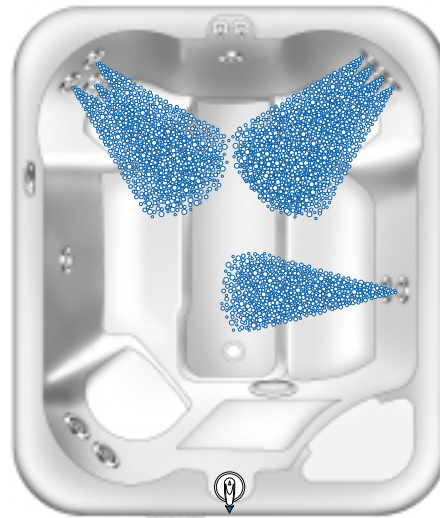
- 2 Soothing Seven® Jets on front left
- 2 Stacked Directional Hydromassage Jets on right wall
- 2 Dual Port Rotary Jets on left rear



Jet System 3

SmartJet® Lever in the 9 o'clock position

- 1 JetStream® Jet on rear wall
- 2 Soothing Seven® Jets on front left
- 3 Jet-Cluster™ System on left rear (2 Dual Port Rotary, 1 Directional Hydromassage)

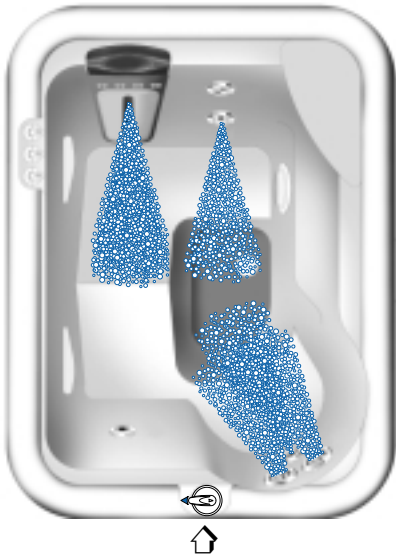


Jet System 4

SmartJet® Lever in the 12 o'clock position

- 2 Stacked Directional Hydromassage Jets on right wall
- 10 Precision™ Jets on right rear
- 3 Jet-Cluster™ System on left rear (2 Dual Port Rotary, 1 Directional Hydromassage)

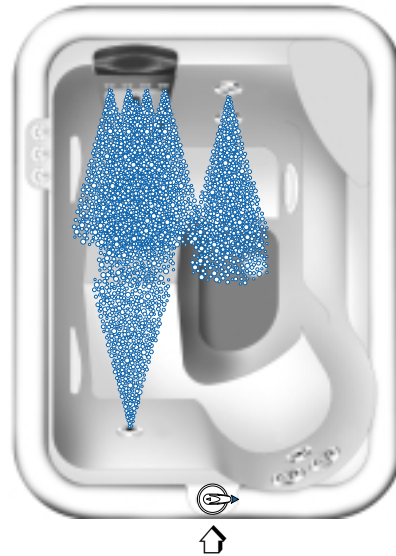
Jetsetter® (Model J) Jet System Menu



Jet System 1

SmartJet® Lever in the 3 o'clock position

- 1 Moto-Massage® Jet on left rear
- 3 Jet-Cluster™ System on front right (2 Soothing Seven® Jets, 1 Directional Hydromassage Jet)
- 1 Directional Hydromassage Jet on back wall



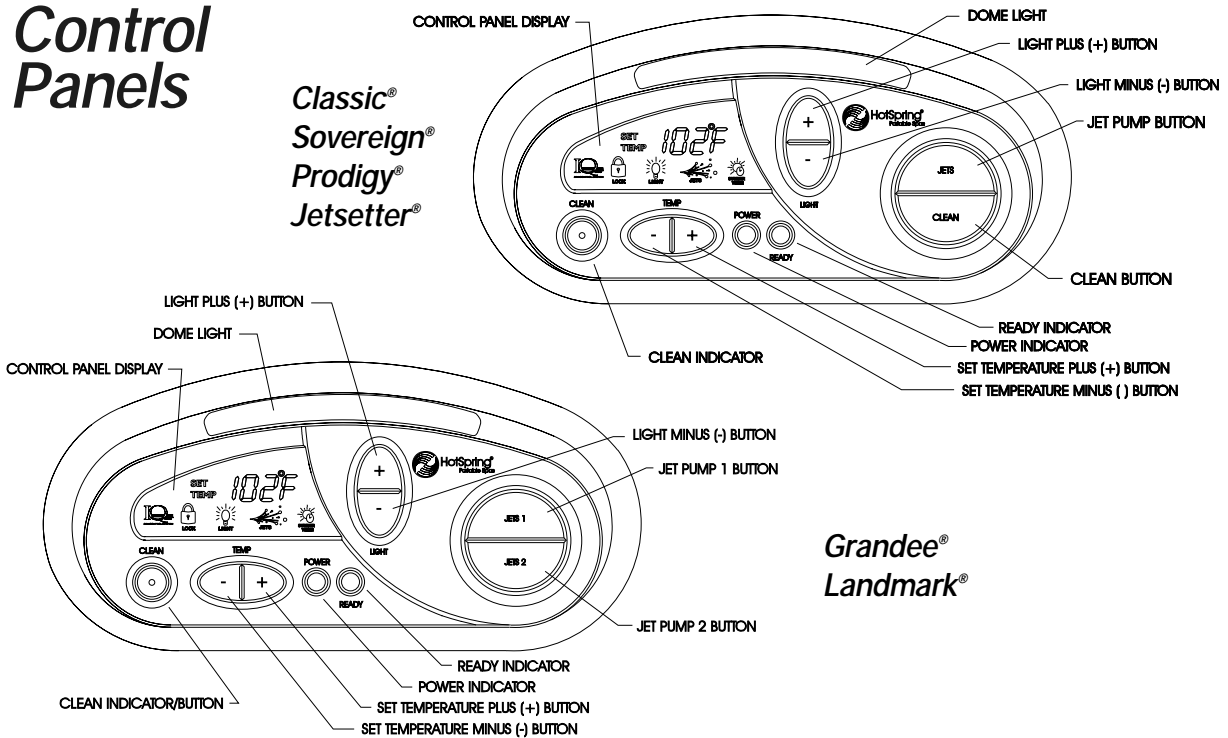
Jet System 2

SmartJet® Lever in the 9 o'clock position

- 1 Moto-Massage® Jet on left rear
- 4 Precision™ Jets above Moto-Massage® Jet
- 2 Stacked Hydromassage Jets on back wall (1 Directional Hydromassage, 1 Dual Port Rotary)
- 1 JetStream® Jet on front left

Control Panels

Classic®
Sovereign®
Prodigy®
Jetsetter®



Grande®
Landmark®

CONTROL PANELS

Hot Spring® Spa models (Grandee®, Landmark®, Classic®, Sovereign®, Prodigy®) are equipped with a main control panel located on the side of the spa and an auxiliary control panel located within the seating area of the spa.

The main control panel controls all of the spa functions, and uses indicator lights and an integrated LCD display to aid in determining the status of the spa. At night, the main control panel and display are illuminated by a soft light from the top of the panel.

The auxiliary control panel (Grandee®, Landmark®, Classic®, Sovereign®, Prodigy®) is conveniently located so that a user inside the spa can operate the light or the jets.

NOTE: If the Spa Lock function has been initiated at the main control panel, the auxiliary control panel will not operate.

MAIN CONTROL PANEL

The main control panel provides a quick visual check of the spa's status, and allows the user to set the temperature, activate the jets and light, and lock the temperature and/or spa functions.

INDICATOR LIGHTS

At a glance, the indicator lights are readily visible on the main control panel. The three indicator lights (Power, Ready and Clean) work independently from the rest of the control panel display. That way, even if the control panel is off, you can simply glance at the "ready" indicator light to determine whether or not your spa is within the range of your set temperature.

Power Indicator: The Power indicator is 'on' when the spa is properly supplied with power. It also provides a diagnostic function—a blinking power indicator indicates that the heater high limit has tripped, meaning that either the spa water is above its acceptable temperature range, or a malfunction has occurred within the spa (such as low circulation due to clogged filters). An 'off' power indicator means that there is a problem with the spa control box or the power supplied to the spa.

Ready Indicator: The Ready indicator will light when the spa water temperature is within 2-1/2°F of the set temperature, and will turn off when the temperature is outside of that range. If you increase or decrease the temperature setting of the spa, the ready indicator will turn off until the spa temperature reaches the acceptable range for the new set temperature. Additionally, a blinking Ready indicator indicates that a problem exists with the temperature sensor.

Clean Indicator: The Clean indicator lights when the Clean button is pressed. It remains on during the ten minute clean cycle (used for water maintenance), then automatically shuts off at the end of the cycle. The Jet symbol will also illuminate on the display to indicate that the jet pump is on.

NOTE: When the Spa Lock feature is activated, the Clean button is disabled. If the Clean button will not turn on the jet pump, refer to the following section and verify that the Spa Lock is off.

LOCKING FEATURES

The two locking features, Temperature Lock and Spa Lock, are enabled from the main control panel by pressing a specific combination of buttons. Once enabled, a lock will remain active until the specific button combination is applied to disable the lock. Even if power is disconnected from the spa and soon thereafter reappplied (such as in a power outage) the lock will remain in place.

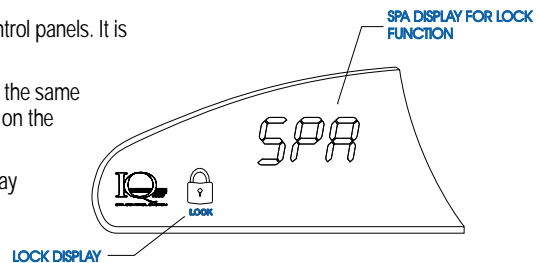
SPA LOCK

The Spa Lock feature deactivates all of the functions of the main and auxiliary control panels. It is generally used to prevent unwanted use of the spa.

To activate the Spa Lock, press the Light Minus (-) and Temp Minus (-) buttons at the same time and hold them down until the word SPA and the lock symbol are illuminated on the display (approximately 2 seconds).

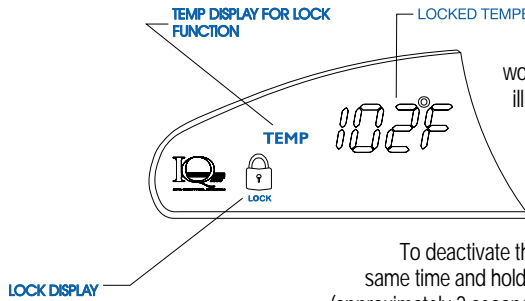
When the Spa Lock is activated, if a button is pressed, the control panel will display the lock symbol and the word SPA for 30 seconds, then turn off.

To deactivate the Spa Lock, press the Light Minus (-) and Temp Minus (-) buttons at the same time and hold them down until the word SPA and the lock symbol are no longer illuminated on the display (approximately 2 seconds).



TEMPERATURE LOCK

The Temperature Lock feature deactivates the temperature control function of the main control panel. All other functions on the main and auxiliary control panels will operate normally. Temperature Lock is most often used by people who do not want others to tamper with or change the set temperature of the spa water.



To activate the Temperature Lock, press the Light Plus (+) and Temp Plus (+) buttons at the same time and hold them down until the words SET TEMP, the numerical set temperature value and the lock symbol are illuminated on the display (approximately 2 seconds).

When the Temperature Lock is activated, the Jets, Light, and Clean buttons will operate normally, and the temperature setting can be viewed but can NOT be changed. If a temperature button is pressed, the control panel will display the lock symbol and the set temperature for 30 seconds, then turn off.

To deactivate the Temperature Lock, press the Light Plus (+) and Temp Plus (+) buttons at the same time and hold them down until the lock symbol is no longer illuminated on the display (approximately 2 seconds).

LOCK OVERRIDE

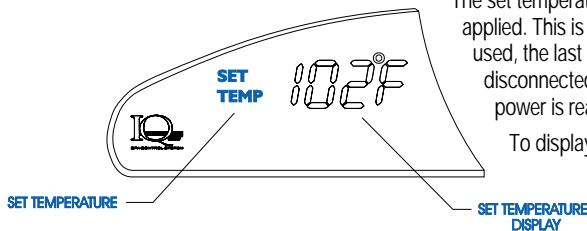
The Lock Override feature is for spa users who normally keep the set temperature locked. Should the user wish to lock all spa controls temporarily, the spa lock can be applied over an already-applied temperature lock. Then, when the spa lock is removed, the temperature lock will remain on, to prevent unwanted tampering with the set temperature.

MAIN CONTROL PANEL BUTTONS AND DISPLAY

The main control panel has buttons which the spa user presses to set the temperature, initiate the clean cycle, vary the intensity of the light, and activate or deactivate the jet pump. With the exception of the Clean button, the control panel display responds to let you know you've pressed a button, and that the selected function has been performed. After a period of non-use, pressing any button will wake up a sleeping display, as well as performing its function.

TEMPERATURE CONTROL

The set temperature range is from 80°F to 104°F. Higher temperatures can be reached by using one of four codes: ut1, ut2, ut3 and ut4. These settings get progressively warmer, with ut4 the highest at approximately 106°F. (The temperature of any setting may rise slightly depending on the current use and condition of your spa, and on outside temperature.)



The set temperature of the spa water will automatically be 102°F the first time that power is applied. This is the setting programmed at the factory. After the spa has been set up and used, the last temperature value set by the user will be stored in memory. If power is disconnected from the spa, it will automatically revert to the last set temperature when power is reapplied.

To display the set temperature of the spa, press the Temp Plus (+) button. The set temperature will be displayed, unless the spa is locked (in which case the word SPA is displayed with the lock symbol). The set temperature display will automatically shut off after 30 seconds.

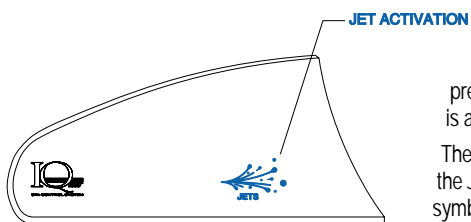
To increase the set temperature of the spa water, press the Temp Plus (+) button. Each time the button is pressed, the set temperature display will increment by one degree. If the button is held down, the set temperature display will increase by one degree every half-second.

To decrease the set temperature of the spa water, press the Temp Minus (-) button. Each time the button is pressed, the set temperature display will decrement by one degree. If the button is held down, the set temperature display will decrease by one degree every half-second.

If the set temperature value will not change, check the Temp Lock and Spa Lock features. When either of these features is applied, the temperature control is disabled.

JETS CONTROL

There are two buttons (three buttons on Grandee® and Landmark® models) which affect the jet pump(s):



The **JETS** button (all models) / **JETS 1** (Grandee® and Landmark® models only) activates the jet pump. When the Jets or Jets 1 button is pressed, the jets symbol will illuminate on the control panel display. The symbol will remain lit until the button is pressed to turn off the jet pump, or after two hours of continuous operation when the pump is automatically shut off by the control system.

The **JETS 2** button (Grandee® and Landmark® only) activates the second jet pump. When the Jets 2 button is pressed, the jets symbol will illuminate on the control panel display. The symbol will remain lit until the button is pressed to turn off the jet pump, or after two hours of continuous operation when the pump is automatically shut off by the control system.

The **Clean** button, provided as a convenient timer for water maintenance, activates the jet pump for a ten minute period. The Clean indicator will turn on and the Jet symbol on the display will illuminate to indicate the jet pump is engaged. Next

you may add properly measured spa water chemicals into the filter compartment. The jet pump and clean indicator will automatically shut off after 10 minutes.

If the jet pump will not engage, make sure Spa Lock is deactivated. Spa Lock disables the controls on both the main and auxiliary control panels.

LIGHT CONTROL

The intensity of the spa's light is controlled using the Light Plus (+) or Light Minus (-) buttons.

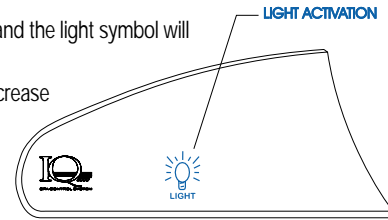
To turn on the spa light, press the Light Plus (+) button. The light will turn on at maximum intensity and the light symbol will illuminate on the control panel display.

To reduce the intensity of the light, press the Light Minus (-) button. The intensity of the light will decrease each time the button is pressed. Additionally, if either of the Light buttons (+ or -) on the Main Control panel only, are held down, the light intensity will increase or decrease at the rate of one intensity level every half-second.

To turn off the light, hold the Light Minus (-) button. The light will dim and turn off. When the light turns off, the light symbol on the display will also turn off.

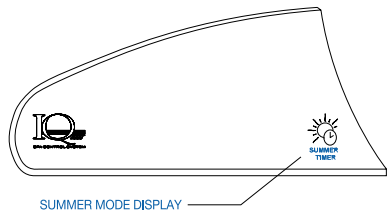
If the light is left on, it will automatically be turned off by the control system after 6 hours of continuous operation. The light symbol on the panel will also turn off when the light is deactivated.

If the light will not turn on, make sure Spa Lock is deactivated. Spa Lock disables the controls on both the main and auxiliary control panels.



SUMMER MODE DISPLAY

The Summer Mode symbol is on when the Summer Mode switch (on the control box) is in the on position. When activated, the symbol will be visible even in bright light when the main display backlight is off. In low light conditions, the Summer Mode symbol will only be visible when the display is activated by pressing a control panel button.



AUXILIARY CONTROL PANEL

The auxiliary control panel, conveniently located in the spa seating area (Grandee®, Landmark®, Classic®, Sovereign®, and Prodigy® models only), allows the user to activate the jets and light from inside the spa.

NOTE: Keep in mind that the auxiliary control panel will not function if the Spa Lock feature on the main control panel has been activated.

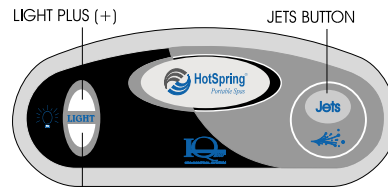
JETS CONTROL

There is one button (two buttons on Grandee® and Landmark® models) which affects the jet pump(s):

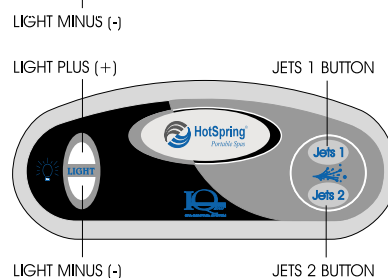
The **JETS** button (all models) / **JETS 1** (Grandee® and Landmark® models only) activates the jet pump. When the Jets or Jets 1 button is pressed, the jets symbol will illuminate on the main control panel display. The symbol will remain lit until the button is pressed again to turn off the jet pump, or after two hours of continuous operation when the pump is automatically shut off by the control system.

The **JETS 2** button (Grandee® and Landmark® only) activates the second jet pump. When the Jets 2 button is pressed, the jets symbol will illuminate on the main control panel display. The symbol will remain lit until the button is pressed to turn off the jet pump, or after two hours of continuous operation when the pump is automatically shut off by the control system.

If the jet pump will not engage, make sure Spa Lock is deactivated. Spa Lock disables the controls on both the main and auxiliary control panels.



**Classic®
Sovereign®
Prodigy®**



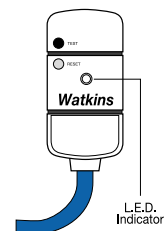
**Grandee®
Landmark®**

LIGHT CONTROL

See Main Control Panel's Light Control section.

115 VOLT GFCI

The Ground Fault Circuit Interrupter is a safety device that is designed to detect as little as 5 milliamps ($\pm 1\text{mA}$) of electrical current leakage to ground. Watkins Manufacturing recommends that the GFCI be tested monthly to ensure it is functioning correctly. With the spa connected to the power supply, push the Test button. The spa should stop operating and the GFCI power indicator will go out. Wait 30 seconds and then reset the GFCI by pushing the Reset button. The GFCI power



indicator will turn on, restoring power to the spa. If the interrupter does not perform in this manner, it is an indication of an electrical malfunction and the possibility of an electric shock. Disconnect the plug from the receptacle until the fault has been identified and corrected.

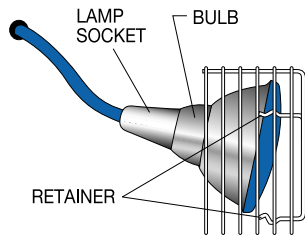
NOTE: Failure to wait 30 seconds before resetting the GFCI may cause the spa's Power indicator (on the control panel) to blink. If this occurs, repeat the GFCI test procedure.

CAUTION: Never use the GFCI as a means to disconnect power to the spa (always unplug it). If the GFCI is tripped while the spa is plugged in, and a power outage occurs, when power returns the GFCI will automatically reset and power will flow to the spa.

LIGHT

All Hot Spring® Spas come equipped with a dimmer-controlled light to enhance nighttime use. The light uses a standard 100 watt outdoor PAR lamp. Should you wish to change the lamp, follow these simple steps:

1. Disconnect the spa from the power supply. On 115 volt models, remove the power cord (plug) from the house receptacle. On 230 volt models, trip the two GFCI breakers in the subpanel.



2. Remove the screws securing the equipment access door; remove the door.
3. Locate the lamp, which is secured into the lampholder assembly. Carefully lift the back of the lamp (with the socket assembly still attached) until the bottom of the lamp lens snaps out of the retainer.
4. Carefully pull the bulb, socket, and cable assembly to the front of the equipment compartment.
5. Replace with a 75 to 100 watt lamp. Do not use a lamp of more than 100 watts.

WARNING: When installing a new lamp, it must be snapped firmly into the wire guard retainer. Failure to install the lamp into the retainer may result in damage to the spa and/or equipment.

To install the lamp into the retainer:

1. Engage the lamp on two of the three bulb retainers.
2. Carefully snap the lamp into the third bulb retainer. This will hold the lamp firmly in the retainer at the correct distance from the light lens.
3. Replace or close the equipment access door and secure it in place.
4. Restore power to the spa (reconnect the power cord on 115 volt models or reset the GFCI breakers on 230 volt models).

IMPORTANT: Do Not Use A Light Bulb In Excess Of 100 Watts!

SUMMER MODE

Your Hot Spring® Spa is equipped with a Summer Mode switch. The Summer Mode switch can be activated during extremely hot summer months if it becomes difficult to maintain water temperatures low enough for comfort. Upon switching to the ON mode, the circulation pump (which can add heat to the water through normal operation), heater and ozone (if installed) will immediately shut down for the next eight hours. Additionally, the summer mode display on the main control panel will activate and remain active for as long as the summer mode is on. Following this eight hour period, the circulation pump, heater, and ozone will automatically re-start and will operate normally for the next sixteen hours. The circulation pump, heater and ozone will continue to turn off for the same eight hour period every day that the switch remains in the ON position. In this way, the amount of heat transferred to the spa water will be minimized. When the outside temperatures begin to cool, the Summer Mode switch should be turned to the OFF position (the summer mode display on the main control panel will go out). This is the efficient 24 hour circulation mode that keeps the heater operation and operating costs to a minimum during colder/heavier usage months.

NOTE: The Summer Mode will not lower the spa's water temperature below the ambient air temperature.

IMPORTANT: Activate the Summer Mode in the morning so that the heater, ozone and circulation pump will be off during the hottest time of the day.

To activate the Summer Mode, simply follow these steps:

1. Turn the temperature control to the minimum setting.
2. Remove the screws securing the equipment compartment door. Remove the door completely.
3. Locate the IQ 2000™ Control box.
4. Locate the Summer Mode switch on the side of the control box by the two white electrical plugs.
5. Activate the Summer Mode by moving the switch to the ON (down) position.
6. Replace and secure the equipment compartment door. Verify that the summer mode display on the main control panel is on.

The Summer Mode must be deactivated when cooler temperatures return. To do this, simply repeat the steps above to access the Summer Mode switch and then move the switch from the ON (down) position to the OFF (up) position.

WARNING: Failure to deactivate the Summer Mode when the temperature drops below 32°F will result in freezing of the spa. Damage resulting from this situation is not covered under the terms of the warranty.

V. SPA CARE AND MAINTENANCE

GENERAL INFORMATION

Your Hot Spring® Spa is manufactured from the highest quality, most durable materials available. Even so, the spa care and maintenance program you develop will ultimately determine how long your spa and its individual components will last. Regular maintenance following the advice in this section will help you to protect your investment.

DRAINING THE WATER

Detergent residues from bathing suits and soap film from your body may gradually accumulate in your spa's water. Normally, in about four months the water will become sudsy and should be replaced. Showering without using soap prior to entering the spa or using only the rinse cycle when laundering your bathing suit will help to reduce detergent residue in the spa water. **Important:** Remember to change your water every four months.

TO DRAIN YOUR SPA:

1. Disconnect the spa from the power supply by the appropriate method:
115 Volt Models - Disconnect the power cord from the house receptacle. Set the power cord in an elevated position so as not to allow water to enter the GFCI plug housing during draining of the spa.
230 Volt Models - Trip both of the GFCI breakers located in the subpanel.
2. Remove the screws from the equipment access door and remove the door completely. Locate the main drain valve for the spa and remove the drain cap. Attach the inlet of a garden hose to the drain valve (to avoid flooding of the foundation surrounding the spa) and route the outlet of the hose to an appropriate draining area.
NOTE: Spa water with a high sanitizer level may harm plants and grass.
3. Open the valve by turning the knob counterclockwise. The spa will drain by gravitational flow.
IMPORTANT: All Hot Spring® Spa models will drain almost completely through the main drain valve and the secondary drain. Equipment such as the jet pump and heating system will drain. Any water remaining within the plumbing or equipment after draining will only need to be removed if the spa is being winterized.
4. Allow most of the water to drain through the main drain.
5. Remove threaded cap from secondary drain. This will drain the remaining water (about 1 gallon) from the bleedline system.
6. When empty, inspect the spa shell and clean as required. (Follow the Care of the Exterior Finish instructions.)
7. Close the drain valve and reinstall the drain cap.
8. Reinstall threaded cap onto secondary drain.
9. Replace or close the equipment access door and replace the screws.
10. Refill the spa through the filter compartment BEFORE restoring power.

IMPORTANT: Always clean and rotate the filter cartridges each time the spa is drained for cleaning.

FILTER SYSTEM

Hot Spring® Spas are equipped with balanced filtration, meaning that the filter cartridges are sized to meet the needs of the jet pump system. Additionally, a separate filter is dedicated to serving the 24-hour circulation system.

As with any water filtering system, the filter cartridges may become clogged, resulting in reduced water flow. In your Hot Spring® Spa, it is important to maintain a clean, unobstructed filtering system. This not only provides the maximum performance from the jets, but allows the 24 hour filtration system to function effectively. *Watkins Manufacturing Corporation recommends the filter cartridges be cleaned (by soaking to dissolve minerals) once every month.*

SERVICE NOTE: Rotating the placement of the filter cartridges within the filter compartment after each cleaning will help to extend their service life.

WARNING: Failure to maintain the cartridges in a clean, unobstructed manner will result in reduced water flow through the heater assembly that may cause the High Limit Thermostat, Heater Thermal Cut-off or Circulation Pump Thermal Cut-off to trip. If this high limit or thermal cut-off trip occurs during sub-freezing temperatures and goes unnoticed, the spa water may freeze. Any damage to the spa (due to freezing) caused as a result of poor maintenance (stated under misuse or abuse in the Hot Spring® Spa Limited Warranty), will not be covered by your spa warranty.

DANGER: To reduce the risk of injury to persons using the spa, DO NOT remove the suction fittings (filter standpipes) located in the filter compartment.

FILTER CARTRIDGES REMOVAL & INSTALLATION

1. Disconnect the spa from the power supply by the appropriate method:
115 Volt Models - Disconnect the power cord from the house receptacle. Set the power cord in an elevated position so as not to allow water to enter the GFCI plug housing during draining of the spa.
230 Volt Models - Trip both of the GFCI breakers located in the subpanel.
2. Remove and carefully set aside the filter compartment cover.
3. Remove any floating items from within the filter compartment.
4. Turn the filter retainer handle (located on the top of the filter cartridge) counterclockwise until the retainer can be removed from the filter standpipe.
5. Remove the filter retainer and cartridge.
SERVICE NOTE: Never remove the filter standpipes when debris is present in the filter compartment. Debris may find its way into the internal plumbing which may result in blockage. NEVER REMOVE SUCTION FITTINGS.
6. To reinstall the filter cartridge, reverse the order of steps in which it was removed. Do not overtighten!

FILTER CARTRIDGE CLEANING INSTRUCTIONS

Always clean the filters using a filter degreaser to remove mineral and oil buildup. Simply soak the filter in the degreaser (according to the degreaser directions), then place the filter on a clean surface and spray until clean using a garden hose. It may be necessary to rotate the filter while spraying to remove any debris lodged between the filter pleats.

WARNING: Do not use the spa with the filter cartridges or filter standpipe removed!

CARE OF THE SPA PILLOWS

The spa pillows used on the Grandee[®], Landmark[®], Classic[®], Sovereign[®] and Jetsetter[®] models will provide years of comfort if treated with care. They have been positioned above the water level to minimize the bleaching effects of chlorinated water and other spa water chemicals. To extend their life, whenever the spa shell is being cleaned, the spa pillows should be removed and cleaned. Body oils can be removed with a mild soap and water solution. ALWAYS rinse off the spa pillows thoroughly to remove any soap residue. The pillows can be conditioned with Watkins Cover Shield after cleaning. If the spa is not going to be used for a long period of time (that is during a vacation or if the spa is winterized), or when the spa water is being super-chlorinated, the spa pillows should be removed until the next use of the spa.

To remove and replace the spa pillows:

1. Carefully lift one end of the pillow away from the spa shell.
2. Continue lifting one end until both pillow retainers are released from the pillow.
IMPORTANT: Just pulling the pillow straight up and out of the shell recess will eventually damage the pillow. This abuse is not covered under warranty.
3. To reinstall the spa pillow, carefully bend the pillow slightly to allow one of the pillow retainers to slip into the recess in the back of the pillow.
4. Keeping the pillow slightly bent, slide the other pillow retainer into the recess in the back of the pillow.
5. After the second pillow retainer is in place, press the pillow down into the recess in the spa shell.

CARE OF THE EXTERIOR

SPA SHELL

Your Hot Spring[®] Spa has an Enduroil[®] thermoplastic shell, or a Quarite Plus[®] shell. Stains and dirt generally will not adhere to your spa's surface. A soft rag or a nylon scrubber should easily remove most dirt. Most household chemicals are harmful to your spa's shell. The only products which have passed the manufacturer's tests are Soft Scrub[®] and Windex[®]. Sodium bicarbonate (baking soda) can also be used for minor surface cleaning. Always thoroughly rinse off any spa shell cleaning agent with fresh water.

SERVICE NOTES:

1. Iron and copper in the water can stain the spa shell if allowed to go unchecked. Your Hot Spring[®] dealer stocks a Stain and Scale Inhibitor to use if your spa water has a high concentration of dissolved minerals.
2. A spa shine can be used after surface cleaning to shine the spa shell.
3. Use only a mild soap and water solution to clean the pillows. Do not use any other type of cleaning product.
4. The use of alcohol or any household cleaners other than those listed to clean the spa shell surface is NOT recommended.

DO NOT use any cleaning products containing abrasives or solvents since they may damage the shell surface. **NEVER USE HARSH CHEMICALS!** Damage to the shell by the use of harsh chemicals is not covered under the warranty.

IMPORTANT: Some surface cleaners contain eye and skin irritants. Keep all cleaners out of the reach of children and use care when applying.

REDWOOD SPA SKIRT

The spa skirt on the Prodigy® and Jetsetter® spas is constructed from the finest quality redwood. During the manufacturing process of the spa, the redwood skirt is sealed with a lightly tinted stain for protection and to enhance its beauty. As with all wood products, prolonged exposure to outdoor weather conditions will cause the redwood skirt to discolor or dry out. The Hot Spring™ Stain Kit has been specially developed to include everything you'll need to refurbish and rejuvenate the redwood spa skirt. Do not use wood sealers or wood furniture-type oils (that is tung, teak or lemon) to seal the skirt as they will cause the redwood to blacken. Discoloration or aging of the redwood skirt is considered natural and is not covered by the warranty.

NOTE: Always test a small area (that is 1 or 2 vertical corner boards) of your spa skirt for stain and wood compatibility if applying a non-recommended stain.

EVERWOOD® SPA SKIRT

The Grandee®, Landmark® and Sovereign® Spas include an Everwood® spa skirt. Everwood® consists of a rigid polymer that combines the durability of plastic with the beauty of redwood. Everwood® won't crack, peel, blister or delaminate even after prolonged exposure to the elements.

Cleaning of Everwood® consists of simply spraying the skirt with a mild soap and water solution to remove any stains and residue.

Do not rub the Everwood® with an abrasive material or use abrasive cleaners as this may damage its texture.

CARE OF THE SPA COVER

WARNING: The cover is a manual safety cover that meets or exceeds all prevailing requirements of ASTM Standards for spa safety covers when installed and used correctly as of the date of manufacture. Non-secured or improperly secured covers are a hazard. Open the cover to its fully open position before use.

VINYL COVER

The vinyl spa cover is an attractive, durable foam insulation product. Monthly cleaning and conditioning are recommended to maintain its beauty.

To clean and condition the vinyl cover:

1. Remove the cover from the spa and gently lean it against a wall or fence.
2. With a garden hose, spray the cover to loosen and rinse away dirt or debris.
3. Using a large sponge and/or a soft bristle brush, and using a very mild soap solution (1 teaspoon dishwashing liquid with 2 gallons of water) or baking soda (sodium bicarbonate), scrub the vinyl top in a circular motion. Do not let the vinyl dry with a soap film on it before it can be rinsed clean.

IMPORTANT: To avoid soap getting into the spa water or baking soda getting on the redwood skirt (which may cause black spots or streaks on the redwood), the spa cover should not be on the spa during cleaning.

4. Scrub the cover's perimeter and side flaps. Rinse clean.
5. Rinse off the bottom of the cover (use no soap), and wipe it clean with a dry rag.
6. To condition the cover after cleaning, apply a thin film of Hot Spring® Cover Shield to the vinyl surface and buff to a high luster.

SERVICE NOTE: To remove tree sap, use cigarette lighter fluid (not charcoal lighter fluid). Use sparingly, and buff with saddle soap immediately afterwards, then wipe dry.

Important reminders:

- DO remove snow buildup to avoid breakage of the foam core.
- DO lock cover straps to secure the cover when the spa is not in use.
- DO NOT drag or lift the spa cover using either the flaps or the coverlock straps.
- DO NOT walk, stand, or sit on the cover.
- DO NOT place any hot items or objects that will magnify or conduct heat on the cover; foam core damage may result.
- DO NOT use any chemicals or cleaners except those recommended by Watkins Manufacturing Corporation or its Authorized Sales and Service Dealer.

HOW TO OPEN A VINYL COVER WITH A HOT SPRING® RETRACTABLE COVER SYSTEM

NOTE: Never attempt to open or remove a vinyl cover by grasping or pulling on the skirting. The skirting will tear, and torn skirting is not covered under the terms of the warranty.

Check for ice build-up around the gas shocks and pivot points of the Retractable Cover System. Ice buildup may damage system components.

Use of Cover In Winds

WARNING: The cover and Retractable Cover System are not recommended for use in wind conditions reaching above 25 mph (40 kmh).

NOTE: If your spa is located in an area susceptible to high winds, additional coverlock straps may be installed to minimize wind damage to the cover.

How to Open the Cover

1. With the coverlock straps unfastened, place one hand under the cover skirting, between the spa and cover, to break the cover's vacuum seal. Then, fold the front half of the cover over onto the back half.
2. The easiest and best way to operate the mechanism is to stand directly behind the spa, locate the handle placed at the rear center of the cover and simply pull the handle. This allows the cover to come to a gentle stop.
3. If no rear access is available, stand to the side of the spa directly adjacent to the hinge area of the folded cover.
 - A. **For the CoverCradle® System:** Using both hands, cup one hand under the lower half of the cover (just above the water) and place the other along the side of the cover, just above the skirt. Gently push (do not lift) with both hands towards the opposite rear corner of the cover (diagonally). As the cover opens, the gas springs will allow the cover to come to a gentle stop.
 - B. **For the GlideRite™ or SpaceSaver™ Retractable Cover Systems:** Simply lift the cover at its center hinge, allowing it to move to the back of the spa and to rest gently there.

NOTE: When opening a cover with a Retractable Cover System, only use one of these two specific methods. Do not attempt to open the cover in any other way. Damage caused by improper opening or closing of the cover is not covered under the terms of the limited warranty.

How to Close the Cover

1. Standing along side the cover, place one hand on the upper corner of the cover and gently push forward in the direction of the spa. The cover will rotate forward to cover half of the spa. **NOTE:** For the GlideRite™ or SpaceSaver™ Retractable Cover Systems, disengage the locking mechanism(s) before pushing the cover forward.
2. Unfold the cover by lifting the handle located on the top (front) half of the cover. Allow the unfolded half to fall down onto the spa. The air pressure created by the cover falling will keep the vinyl skirting from being trapped between the cover and the spa shell.
3. Secure the cover straps to the spa and lock them.

Important reminders:

- **DO** always practice safety around your spa.
- **DO** unlock and release all coverlocks before attempting to open cover.
- **DO** lock the cover when the spa is not in use.
- **DO** cover the spa with the cover when the spa is not in use, empty or full.
- **DO** remove snow build-up to prevent cover damage.
- **DO** keep the cover open during super-chlorination or shock treatment of the spa water.
- **DO NOT** walk, stand, climb or sit on the cover or Retractable Cover System.
- **DO NOT** lift the cover or operate the Retractable Cover System by using the cover flaps. They are not designed to be used as handles.
- **DO NOT** use any chemicals or cleaners except those recommended by Watkins Manufacturing Corporation or its Authorized Sales and Service Dealer.
- **DO NOT** use hard, sharp or metal objects, such as a car windshield scraper, to remove ice. Such objects can cut, mar or puncture the plastic and vinyl surfaces.

WARNING: Keep unsupervised children away from the cover. Always lock the cover in place after use! Keep hands away from the hinging points. Do not allow anyone to climb, sit or stand on the cover when in the open position. Injury may occur, as well as damage to the cover and mechanism.

VACATION CARE INSTRUCTIONS

If you plan to be away, follow these instructions to ensure the water quality of your spa is maintained:

SHORT TIME PERIODS (3-5 DAYS):

1. Adjust the pH by following the instructions outlined in the Water Quality and Maintenance section.
2. Sanitize the water by following the shock procedures also listed in the Water Quality section.
3. Lock your cover in place using the coverlocks.
4. Upon your return, sanitize the water by following the shock procedures, and balance the pH.

LONG TIME PERIODS (5-14 DAYS):

Prior to leaving:

1. At least one day before you leave, set the temperature to its lowest level. This setting should represent an approximate water temperature of 80°F.

IMPORTANT NOTE: Spa water oxidizers such as sodium dichlor chlorine maintain their level of effectiveness substantially longer in warm water (80°F) than in hot water (101°F to 104°F).

2. Adjust the pH as required. Sanitize the water by following the shock procedures.

Upon your return:

3. Sanitize the water by following the shock procedures. Return the set temperature to its original setting. The spa water will be safe for you to use once the Free Chlorine Residual level has dropped below 5.0 ppm.

NOTE: If you will not be using your spa for an extended period of time (in excess of 14 days) and an outside maintenance service (or neighbor) is not available to assist with the water maintenance, draining or winterizing of the spa is recommended. Spas equipped with our FreshWater® II Ozone System can extend this to 4 weeks. The FreshWater® II Ozone System does not guard against possible freezing damage, however.

PREVENTION OF FREEZING

Your Hot Spring® Spa has been designed and engineered for year-round use in any climate. In some areas, extremely cold temperatures (below 10°F) combined with strong wind may cause partial freezing of the jet pump, even though the water inside the spa remains at the selected temperature. The energy efficiency of the spa may also decrease during these cold periods, as the heater will cycle more frequently. To avoid most problems associated with component freezing, the 24-hour continuous filtration system has been designed with bleed lines connecting the jet pump(s) with the heating system. Since the heating system's circulation pump runs continuously, cooler water in the heating and filtering systems is continually being replaced by warm water from the spa. As an additional precaution against partial freezing of some of the components, the equipment compartment door can be insulated with a fiberglass insulation blanket (available from your Hot Spring® Spa dealer). This additional insulation will also help to maximize the spa's energy efficiency.

NOTE: When warmer weather returns (approx. 60°-70°F), the insulating blanket must be removed to prevent overheating of the jet pump.

Please contact your Hot Spring® Spa dealer for additional information or to order the insulation blanket.

WINTERIZING

In very cold weather you may not want to venture outside to use your spa. In this case, you may move it to a heated area, or leave it as is until the weather warms. If you do leave the spa unused for a long period of time in severely cold weather, you should drain the spa to avoid accidental freezing due to a power or equipment failure.

Your local authorized dealer can perform the following winterizing steps if you do not wish to attempt them yourself:

1. Disconnect the spa from the power supply by the appropriate method:
 - 115 Volt Models** - Disconnect the power cord from the house receptacle, coil it and place it in the equipment compartment.
 - 230 Volt Models** - Trip both of the GFCI breakers located in the subpanel.
2. Remove the screws from the equipment access door; remove the door completely.
3. Locate the main drain valve and remove the drain cap. Attach a garden hose to the drain valve and route the outlet of the hose to an appropriate draining area.

4. Open the valve and the spa will drain by gravitational flow.
5. Remove the threaded cap from the secondary drain. The remaining water (about 1 gallon) will drain from the bleedline system.
6. Remove the filter cartridges, then clean and store the cartridges in a dry place.
IMPORTANT: Sponge out any residual water from inside the spa and the recesses of the filter compartments. Wipe all surfaces dry.
7. Close the cover. If your spa has a vinyl cover, cover it with a large board to distribute the weight of snow and ice.

SERVICE NOTES:

- Leave the main drain valve open approximately 1/4 turn during the winterizing months.
- You may wish to remove the filter standpipe to facilitate draining of the filter compartment.
NOTE: Remove any debris present on the floor of the filter compartment prior to removal of the filter standpipe (large debris may block freeze drain bleed lines if allowed to enter the plumbing lines). When replacing, do not overtighten.
- To completely drain the internal plumbing, a wet / dry shop vac can be used to draw any remaining water through the drain.

To Reactivate:

Reinstall the filter cartridges, close the main drain and reinstall the drain caps. Follow the Start-Up Procedures to make your Hot Spring® Spa operational.

IMPORTANT: Always keep spa covered when not in use (empty or full).

VI. WATER QUALITY AND MAINTENANCE

It's important to have clean water. Water maintenance is one of the least understood, yet an important area of spa ownership. Your dealer can guide you through the process of achieving and maintaining perfect water in your spa, given your local conditions; here is our suggested step-by-step program.

Your program will depend on your water's mineral content, how often you use your spa, and how many people use it.

Watkins has developed the EverFresh® Water Care System for its spas, which is an alternative to using an entirely chlorine-based system. This system uses silver ions, ozone and an active sanitizer (monopersulfate) to sanitize the spa. It includes the FreshStart™ 10,000 Pre-filter, the FreshWater® II High Output Ozone System, and the FreshWater_{Ag+}™ Silver Ion Purifier.

GENERAL INFORMATION

THE THREE FUNDAMENTAL AREAS OF WATER MAINTENANCE:

- **Water Filtration**
- **Water Sanitation**
- **Chemical Balance/pH Control**

Although your spa's filter system is working 24 hours a day to remove particles from your water, it does not remove bacteria or viruses.

Water Sanitation is the responsibility of the spa owner, achieved through the regular and periodic (daily, if necessary) addition of an approved sanitizer. The sanitizer will chemically control the bacteria and viruses present in the fill water or introduced during use of the spa. Bacteria and viruses can grow quickly in undersanitized spa water.

The water's chemical balance and pH control are also the responsibility of the spa owner. You'll have to add chemicals to maintain proper levels of Total Alkalinity (TA), Calcium Hardness (CH) and pH. Proper water balance and pH control will minimize scale buildup and corrosion of metals, extend the life of the spa, and allow the sanitizer to work at maximum efficiency.

METHODS FOR TESTING THE SPA WATER

Accurate water testing and analysis are an important part of effectively managing your spa water. To follow the Hot Spring® Spa recommended program, you must have the ability to test for:

- Total Alkalinity (TA)
- Calcium Hardness (CH)
- pH
- Sanitizer

NOTE: When the EverFresh® System with MPS is used, it is not possible to test for MPS.

Two types of testing methods are recognized and recommended by Watkins:

The Reagent Test Kit is the preferred method and provides the highest level of accuracy. The reagents come in either liquid or tablet form.

Test Strips are a convenient testing method used by many spa owners. Keep in mind that test strips are susceptible to heat and moisture contamination, which will result in inaccurate readings.

IMPORTANT: Always read and carefully follow the directions included with the Test Kit or Test Strips to ensure the accuracy of the test results.

HINTS FOR SUCCESSFUL WATER TESTING

When using the reagent test kit:

- Always take water samples 12" - 18" below the water surface.
- Rinse the test cells before and after each use.
- Do not dispose of test samples into the spa water.
- When adding drops of chemicals from the kit (the reagents) into the test block, hold the bottle vertically and add the drops slowly to be sure the correct quantity is used.
- The reagents should be replaced on a yearly basis to maintain the accuracy of the test results.

When using either a calibrated test block or test strips, test comparisons should be made in natural light.

BASIC CHEMICAL SAFETY

When using chemicals, read the labels carefully and follow directions precisely. Though chemicals protect you and your spa when used correctly, they can be hazardous in concentrated form. Always observe the following guidelines:

- Allow only a responsible person to handle spa chemicals. Keep them out of the reach of children.
- Accurately measure the exact quantities specified, never more. Do not overdose your spa.
- Handle all containers with care. Store in a cool, dry, well ventilated place.
- Always keep chemical containers closed when not in use. Replace caps on their proper containers.
- Don't inhale fumes or allow chemicals to come in contact with your eyes, nose, or mouth. Wash your hands immediately after use.
- Follow the emergency advice on the product label in case of accidental contact, or if the chemical is swallowed. Call a doctor or the local Poison Control Center. If a doctor is needed, take the product container along so that the substance can be identified.
- Don't let chemicals get on surrounding surfaces or landscaping. Don't use a vacuum cleaner to clean up chemical spills.
- Never smoke around chemicals. Some fumes can be highly flammable.
- Don't store any chemicals in the spa equipment compartment.

HOW TO ADD CHEMICALS TO THE WATER

IMPORTANT: All spa water chemicals, including granulated dichlor, MPS, granulated pH increaser or decreaser, granulated total alkalinity increaser, liquid stain and scale inhibitor, and liquid de-foamer must always be added directly into the filter compartment while the jet pump is running, and it must run for a minimum of ten minutes.

To Administer Spa Water Chemicals:

1. Fold back the cover. Carefully remove and set aside the filter compartment cover.
2. Push the Clean button to turn on the jet pump.
3. Carefully measure the recommended amount of chemical and slowly pour it into the filter compartment. Use care not to splash chemicals on your hands, in your eyes, on the spa shell surface or on the skirt.
4. Replace the filter compartment cover. Close and secure the cover. After ten minutes, the jet pump will automatically shut off to complete the procedure. **Risk of Drowning:** Never leave an open spa unattended!

IMPORTANT "SUPER CHLORINATION/NON-CHLORINE SHOCK TREATMENT" NOTE: After administering a super chlorination treatment or non-chlorine shock to your spa, leave the cover open for a minimum of 20 minutes to allow the oxidizer gas to vent. A high concentration of trapped oxidizer gas which may exist as a result of the shock treatment (not daily sanitation) may eventually cause discoloration or vinyl degradation to the bottom of the cover. This type of damage is considered chemical abuse and is not covered under the terms of the limited warranty.

THE HOT SPRING® SPA WATER MAINTENANCE PROGRAM

Following the Hot Spring® Spa program will save you time and frustration as well as ensure clear, clean spa water.

IMPORTANT: Each step in your water maintenance program is dependent on the completion of the previous steps. Omitting a step or failing to reach the recommended range may cause an imbalance in your water's chemistry. Unbalanced water chemistry can damage the spa and its components as well as cause discomfort for the user.

FILLING THE SPA WITH WATER

- A. Watkins recommends using the FreshStart™_{10,000} Pre-filter when filling the spa (through the filter compartment) with water.
WARNING: DO NOT use the FreshStart™_{10,000} Pre-filter if you plan to use granular bromine (see Maintaining the Sanitizer Level section).
- B. The FreshStart™_{10,000} Pre-filter is designed to remove unwanted bacteria and contaminants such as rust, dirt, detergents, algae and chemicals from the fill water. Dissolved minerals and metals such as lead, calcium, copper and iron are not removed.
- C. Instructions are included with the FreshStart™_{10,000} Pre-filter. When the spa is filled, proceed to the next step.

BALANCING THE TOTAL ALKALINITY (TA)

- A. The recommended Total Alkalinity (TA) for your spa water is 125-150 ppm.
- B. Total Alkalinity is a measure of the total levels of carbonates, bicarbonates, hydroxides, and other alkaline substances in the water. TA is referred to as the water's "pH buffer". In other words, it's a measure of the ability of the water to resist changes in pH level.
- C. If the TA is too low, the pH level will fluctuate widely from high to low. Fluctuations in pH can cause corrosion or scaling of the spa components. **Low TA can be corrected by adding sodium bicarbonate.**
- D. If the Total Alkalinity is too high, the pH level will tend to be high and may be difficult to bring down. **It can be lowered by using sodium bisulfate.**
- E. Once the TA is balanced, it normally remains stable, although the addition of more water with a high or low alkalinity will raise or lower the TA reading of the water.
- F. When the Total Alkalinity is within the recommended range, proceed to the next step.

BALANCING THE CALCIUM HARDNESS (CH)

- A. The recommended Calcium Hardness (CH) level for your spa is 150-200 ppm.
- B. Calcium Hardness is a measure of the total amount of dissolved calcium in the water. Calcium helps control the corrosive nature of the spa's water. That's why calcium-low water (commonly known as "soft" water) is not recommended. It is very corrosive to the equipment, and can cause staining of the spa shell. **Calcium hardness increaser is the antidote.**
- C. If the CH is too high (commonly known as "hard water"), formation of scale on the spa's shell surface and equipment can result. **CH can be decreased by dilution—a mixture of 75% hard and 25% soft water will usually yield a reading within the correct range.** If soft water is not available or practical for you, a stain and scale control should be added to the spa water, according to instructions on its label.
- D. Once the CH is balanced, it normally remains stable, although the addition of more water with a high or low calcium content will raise or lower the CH reading of the water.
- E. When the Calcium Hardness is within the recommended range, proceed to the next step.

BALANCING THE PH

- A. The recommended pH level for your spa water is 7.4-7.6.
- B. The pH level is the measure of acidity and alkalinity. Values above 7 are alkaline; those below 7 are acidic. Maintaining the proper pH level is extremely important for:
 - Optimizing the effectiveness of the sanitizer.
 - Maintaining water that is comfortable for the user.
 - Preventing equipment deterioration.
- C. If the spa water's pH level is too low, the following may result:
 - The sanitizer will dissipate rapidly.
 - The water may become irritating to spa users.
 - The spa's equipment may corrode.

If the pH is too low, it can be increased by adding sodium carbonate to the spa water.

- D. If the pH level is too high, the following may result:
 - The sanitizer is less effective.
 - Scale will form on the spa shell surface and the equipment.
 - The water may become cloudy.
 - The filter cartridge pores may become obstructed.

If the pH is too high, it can be decreased by adding sodium bisulfate to the spa water.

ALKALINE TUB WATER (SCALING ZONE)	8.2	ADD pH DECREASER TO LOWER pH
	7.8	
	7.6	
COMFORT ZONE	7.4	IDEAL
ACIDIC TUB WATER (CORROSIVE ZONE)	7.2	ADD pH INCREASER TO RAISE pH
	6.8	
	pH	

NOTE: After adding sodium bisulfate, **wait two hours** before testing the water for pH. Measurements taken too soon may not be accurate.

- E. It is important to check the pH on a regular basis. The pH will be affected by the bather load, the addition of new water, the addition of various chemicals, and the type of sanitizer used.
- F. When the pH is within the recommended range, proceed to the final step.

MAINTAINING THE SANITIZER LEVEL

- A. Sanitizer is extremely important for killing algae, bacteria and viruses, and preventing unwanted organisms from growing in the spa. At the same time, you don't want too high a sanitizer level, or it can irritate your skin, lungs and eyes.
- B. Always maintain the sanitizer level in your spa at the recommended level for each type of sanitizer.
- C. Watkins recommends only the following sanitizers:
- FreshWater_{Ag+}TM Silver Ion Purifier with potassium monopersulfate or potassium peroxymonosulfate (MPS)
 - Sodium Dichloro-s-Triazinetrione (Sodium Dichlor or chlorine)
 - Sodium Bromine with MPS

WARNING: DO NOT use tri-chlor chlorine, any type of compressed bromine or chlorine, acid or any type of sanitizer which is not recommended by Watkins.

Refer to the following two sections to use either the FreshWater_{Ag+}TM Silver Ion Purifier or Sodium Dichlor as your sanitizer.

THE WATKINS WATER MAINTENANCE QUICK REFERENCE GUIDE				
Steps	Ideal Range (ppm)		What Chemicals to Use	
	Minimum	Maximum	To Raise	To Lower
1 Total Alkalinity	125	150	Sodium Bicarbonate	Sodium Bisulfate
2 Calcium Hardness	150	200	Calcium Hardness Increaser	Use a mixture of 75% hard water and 25% soft water or use a Stain and Scale Inhibitor
3 pH	7.4	7.6	Sodium Carbonate	Sodium Bisulfate
4 Sanitizer	See section on Maintaining the Sanitizer Level			

FRESHWATER_{Ag+}TM SILVER ION PURIFIER

The FreshWater_{Ag+}TM Silver Ion Purifier used in conjunction with the addition of an aggressive oxidizer, such as a common non-chlorine shocking agent (potassium monopersulfate, also known as MPS), will sanitize the spa water.

Silver ions are also introduced into your spa water by using the FreshStartTM_{10,000} Pre-filter when filling your spa. Additionally, Watkins highly recommends the use of the FreshWater[®] II High Output Ozone System with the FreshWater_{Ag+}TM Silver Ion Purifier.

IMPORTANT: Remember to use MPS designed for use in spas, such as Hot Spring[®] Spa Shock. Other non-chlorine shocking agents for swimming pools may contain chemicals incompatible with the FreshWater_{Ag+}TM Silver Ion Purifier (such as blue crystals in MPS). The recommended MPS should have an active ingredient content of 30% - 33%.

SANITATION

<i>When:</i>	<i>What to do, if using Monopersulfate (MPS):</i>	<i>What to do, if using Chlorine (Sodium Dichlor):</i>																								
At spa startup or refill	Use Chlorine at spa startup or refill even when using MPS as your usual sanitizer (See Chlorine column at right).	Add one and one half (1-1/2) teaspoons of chlorine per 250 gallons NOTE: Use the FreshStart™ _{10,000} Pre-filter when filling the spa to remove unwanted contaminants and bacteria. <table style="width: 100%; border: none;"> <tr><td>Grandee® (Model G)</td><td style="text-align: right;">3 teaspoons</td></tr> <tr><td>Landmark® (Model S)</td><td style="text-align: right;">2-3/4 teaspoons</td></tr> <tr><td>Classic® (Model F)</td><td style="text-align: right;">2-1/4 teaspoons</td></tr> <tr><td>Sovereign® (Model I)</td><td style="text-align: right;">2-1/4 teaspoons</td></tr> <tr><td>Prodigy® (Model H)</td><td style="text-align: right;">2 teaspoons</td></tr> <tr><td>Jetsetter® (Model J)</td><td style="text-align: right;">1-1/2 teaspoons</td></tr> </table>	Grandee® (Model G)	3 teaspoons	Landmark® (Model S)	2-3/4 teaspoons	Classic® (Model F)	2-1/4 teaspoons	Sovereign® (Model I)	2-1/4 teaspoons	Prodigy® (Model H)	2 teaspoons	Jetsetter® (Model J)	1-1/2 teaspoons												
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Prior to each use	Add one (1) tablespoon of monopersulfate per 250 gallons <table style="width: 100%; border: none;"> <tr><td>Grandee® (Model G)</td><td style="text-align: right;">2 tablespoons</td></tr> <tr><td>Landmark® (Model S)</td><td style="text-align: right;">1-3/4 tablespoons</td></tr> <tr><td>Classic® (Model F)</td><td style="text-align: right;">1-1/2 tablespoons</td></tr> <tr><td>Sovereign® (Model I)</td><td style="text-align: right;">1-1/2 tablespoons</td></tr> <tr><td>Prodigy® (Model H)</td><td style="text-align: right;">1-1/4 tablespoons</td></tr> <tr><td>Jetsetter® (Model J)</td><td style="text-align: right;">1 tablespoon</td></tr> </table>	Grandee® (Model G)	2 tablespoons	Landmark® (Model S)	1-3/4 tablespoons	Classic® (Model F)	1-1/2 tablespoons	Sovereign® (Model I)	1-1/2 tablespoons	Prodigy® (Model H)	1-1/4 tablespoons	Jetsetter® (Model J)	1 tablespoon	Add one-third (1/3) teaspoon of chlorine per 250 gallons <table style="width: 100%; border: none;"> <tr><td>Grandee® (Model G)</td><td style="text-align: right;">2/3 teaspoon</td></tr> <tr><td>Landmark® (Model S)</td><td style="text-align: right;">2/3 teaspoon</td></tr> <tr><td>Classic® (Model F)</td><td style="text-align: right;">1/2 teaspoon</td></tr> <tr><td>Sovereign® (Model I)</td><td style="text-align: right;">1/2 teaspoon</td></tr> <tr><td>Prodigy® (Model H)</td><td style="text-align: right;">1/2 teaspoon</td></tr> <tr><td>Jetsetter® (Model J)</td><td style="text-align: right;">1/3 teaspoon</td></tr> </table>	Grandee® (Model G)	2/3 teaspoon	Landmark® (Model S)	2/3 teaspoon	Classic® (Model F)	1/2 teaspoon	Sovereign® (Model I)	1/2 teaspoon	Prodigy® (Model H)	1/2 teaspoon	Jetsetter® (Model J)	1/3 teaspoon
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Every four months	Drain and refill your spa. Replace the FreshWater _{Ag+} ™ Silver Ion Purifier NOTE: Use the FreshStart™ _{10,000} Pre-filter when filling the spa to remove unwanted contaminants and bacteria.	Drain and refill your spa. Replace the FreshWater _{Ag+} ™ Silver Ion Purifier NOTE: Use the FreshStart™ _{10,000} Pre-filter when filling the spa to remove unwanted contaminants and bacteria.																								
As needed, if water is hazy, cloudy or has an odor	Add three (3) tablespoons of monopersulfate per 250 gallons <table style="width: 100%; border: none;"> <tr><td>Grandee® (Model G)</td><td style="text-align: right;">6 tablespoons</td></tr> <tr><td>Landmark® (Model S)</td><td style="text-align: right;">5 tablespoons</td></tr> <tr><td>Classic® (Model F)</td><td style="text-align: right;">4-1/2 tablespoons</td></tr> <tr><td>Sovereign® (Model I)</td><td style="text-align: right;">4-1/2 tablespoons</td></tr> <tr><td>Prodigy® (Model H)</td><td style="text-align: right;">4 tablespoons</td></tr> <tr><td>Jetsetter® (Model J)</td><td style="text-align: right;">2-1/2 tablespoons</td></tr> </table>	Grandee® (Model G)	6 tablespoons	Landmark® (Model S)	5 tablespoons	Classic® (Model F)	4-1/2 tablespoons	Sovereign® (Model I)	4-1/2 tablespoons	Prodigy® (Model H)	4 tablespoons	Jetsetter® (Model J)	2-1/2 tablespoons	Add one and one half (1-1/2) teaspoons of chlorine per 250 gallons <table style="width: 100%; border: none;"> <tr><td>Grandee® (Model G)</td><td style="text-align: right;">3 teaspoons</td></tr> <tr><td>Landmark® (Model S)</td><td style="text-align: right;">2-3/4 teaspoons</td></tr> <tr><td>Classic® (Model F)</td><td style="text-align: right;">2-1/4 teaspoons</td></tr> <tr><td>Sovereign® (Model I)</td><td style="text-align: right;">2-1/4 teaspoons</td></tr> <tr><td>Prodigy® (Model H)</td><td style="text-align: right;">2 teaspoons</td></tr> <tr><td>Jetsetter® (Model J)</td><td style="text-align: right;">1-1/2 teaspoons</td></tr> </table>	Grandee® (Model G)	3 teaspoons	Landmark® (Model S)	2-3/4 teaspoons	Classic® (Model F)	2-1/4 teaspoons	Sovereign® (Model I)	2-1/4 teaspoons	Prodigy® (Model H)	2 teaspoons	Jetsetter® (Model J)	1-1/2 teaspoons
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SILVER ION SANITATION

It is important to follow the recommended application and maintenance programs outlined for each product's use.

At startup or when refilling a spa, always shock the spa water using chlorine (sodium dichlor) before beginning the silver ion/MPS regimen. To maintain a properly sanitized spa, an oxidizing agent (MPS) must be added to the spa water 15 minutes prior to each use. If the spa is being used over an extended period of time, such as a whole afternoon or evening, additional oxidizer will be needed. In this case, MPS should be added to the spa more frequently, at least every hour or more frequently to maintain proper sanitation.

In addition to the normal usage of the oxidizer, a weekly shock treatment is required. The shock treatment destroys any contaminants while revitalizing the silver ion cartridge, allowing the silver ions to continue to be released into the water. This process should always be performed when first filling or refilling your spa.

To "shock treat" the spa you may use either MPS or sodium dichlor. It will require much less sodium dichlor to administer the shock treatment than MPS (1 teaspoon of sodium dichlor has sanitizing capabilities comparable to 2 tablespoons of MPS). Sodium dichlor may be a more appropriate weekly shock for those users that experience heavy bather load conditions, or when a usual dose of MPS has been underadministered or missed entirely.

FRESHWATER_{Ag+}TM SILVER ION PURIFIER REPLACEMENT INSTRUCTIONS

When replacing the Silver Ion Purifier (every four months), it is highly recommended that the spa be drained and refilled at the same time. After refilling the spa with water, balance the Total Alkalinity (TA), Calcium Hardness (CH) and pH to the recommended levels. Shock the spa by adding sanitizer, either MPS or sodium dichlor (See Sanitization Table for details).

1. Fold back the cover.
2. Carefully remove and set aside the filter compartment cover.
3. Remove any floating items within the filter compartment.
4. Locate the gray filter cap. Turn the filter cap counterclockwise until the cap can be removed from the filter standpipe.
5. Remove and clean filter cartridges.

NOTE: When replacing the FreshWater_{Ag+}TM Silver Ion Purifier, it is an excellent time to clean and rotate the filters to extend their lives. To rotate the filters, simply move the filters from one standpipe to another. Typically, the filter on the circulation system (with gray filter cap, standpipe and wallfitting) is subject to the greatest load. By rotating the filters, the load placed on the individual filter by the circulation system is greatly reduced. This extends the life of the filters.

6. Remove the existing FreshWater_{Ag+}TM Silver Ion Purifier.
7. Install the new FreshWater_{Ag+}TM Silver Ion Purifier into the filter standpipe. Do not force the FreshWater_{Ag+}TM Silver Ion Purifier down into the filter standpipe.
8. Reinstall the cleaned filter cartridges.
9. Replace and secure the gray filter cap.
10. Replace the filter compartment cover.
11. Fold the cover back into place.

WARNING: If the removal of the standpipes is necessary, always reinstall the gray standpipe in the gray wallfitting at the bottom of the filter compartment. Never use the spa with the filter cartridges or filter standpipes removed!

SILVER IONS QUESTIONS AND ANSWERS

Question: How are the silver ions actually added to the water?

Answer: The silver ion cartridge contains ceramic beads that are infused with silver. By placing the cartridge in the circulation pump filter standpipe, it is subjected to the continuous flow of water created by the pump's 24 hour circulation. The flowing water, through a chemical erosion process, carries with it the silver ions necessary to add a sanitizing residual to the spa water.

Question: What other types of oxidizers can be used during the active sanitation process?

Answer: As an alternative to the MPS, sodium dichlor (granular chlorine) may be substituted during the active sanitation process. 1 teaspoon of dichlor equals 2 tablespoons of MPS.

Question: What happens if I do not add the weekly shock treatment?

Answer: The contaminants in the water may coat the silver ion cartridge's ceramic beads, blocking the silver ions' release into the water. When this occurs, there will be no residual of silver ions present in the water, eliminating them from the sanitizing process.

Question: How often should the FreshWater_{Ag+}TM Silver Ion Purifier cartridge be replaced?

Answer: The cartridge must be replaced every four months. Please refer to the instructions provided with each FreshWater_{Ag+}TM Silver Ion Purifier cartridge.

Question: Can I use the FreshWater[®] II Ozone System in addition to the silver ion system?

Answer: Yes. In fact, it is preferred! The use of the FreshWater[®] II Ozone System will enhance the performance of the silver ions and may substantially reduce the need for supplemental chemical treatments when the spa is not in use.

Question: Why can't I use bromine or biguanides instead of MPS or chlorine as my sanitizer?

Answer: Bromine and biguanides will chemically react with the sanitizing action of the silver ions. This will eliminate their beneficial sanitizing effect.

Question: I see different types of MPS in my local pool supply store. Which one should I use?

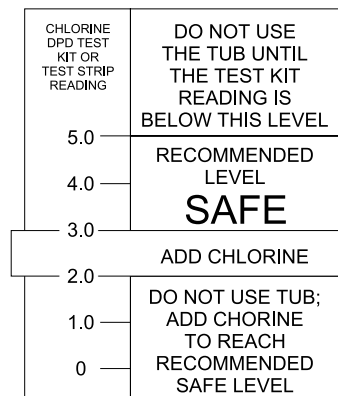
Answer: Generally, two types of non-chlorine shock (containing MPS) are available: one for swimming pools and one for spas. Use only non-chlorine shock designed for use in spas, such as Hot Spring[®] Spa Shock. Non-chlorine shock for pools may contain a clarifier (typically blue crystals in the shocking agent). The clarifier will react with the silver ions and cause the water to appear cloudy and reduce the effectiveness of the silver ions.

DOS AND DON'TS

- DO add MPS (or other approved sanitizing activator) prior to each use.
- DO shock the spa weekly with sanitizer (use either MPS or sodium dichlor).
- DO change the FreshWater_{Ag+}™ Silver Ion Purifier every 4 months.
- DO test Total Alkalinity and pH weekly.
- DO use MPS for spas only.
- DO store the MPS in a tightly sealed container in a cool, dry place.
- DO shock the spa with chlorine at spa startup or refill.
- DON'T use bromine, sodium bromide or biguanides. These are an active sanitizer and will combine with the silver ions to inactivate them.
- DON'T use a water clarifier. Clarifiers will cause the spa water to become cloudy.

CHLORINE (SODIUM DICHLOR)

- Sanitizing chemicals, such as chlorine, are oxidants that kill bacteria and viruses in the water. The Free Available Chlorine (FAC) is a measure of the amount of unused chlorine available to sanitize the spa. The recommended FAC for your spa water is 3.0-5.0 ppm.
- Watkins Manufacturing Corporation recommends the use of Sodium Dichlor type granulated chlorine for sanitizing the water. Sodium Dichlor is preferred because it is totally soluble, dissolves quickly and is nearly pH neutral.
- Maintaining the proper level of chlorine during use is extremely important.
- If the FAC is too low, bacteria and viruses can grow rapidly in the warm water. **Increase the FAC by adding granulated Sodium Dichlor.**
- If the FAC is too high, the water can cause discomfort to the user's eyes, lungs and skin. **Simply allow some time to pass. The FAC level will naturally drop over time.**
- When the Free Available Chlorine is within the recommended range, the spa is ready to be enjoyed.



WARNING: There are several forms of stabilized chlorine available for use in spas and swimming pools and each form has specific chemical characteristics. It is extremely important that the one you choose is specifically designed for use in spas. Use of an incorrect product such as tri-chlor, which has a very low pH (2.6), dissolves too quickly in hot water resulting in extremely high levels of chlorine, and is designed for concrete or plaster swimming pools, WILL cause damage to your spa. Use of a liquid or concentrated form of sanitizer WILL damage your spa and is specifically not covered under the terms of the limited warranty.

IMPORTANT: Granulated chlorine (Sodium Dichlor) will degrade if stored improperly. We recommend purchasing chlorine in one or two pound containers and storing it in a cool, dry place to maintain its potency.

SUPER CHLORINATION

Super Chlorination is designed to "burn-off" the build-up of chloramines (used chlorine), to eliminate the chlorine smell and to allow the proper level of free chlorine to be maintained.

When giving your water a super chlorination treatment, open the cover at least half way to allow the chlorine gas to vent off. The high concentration of chlorine gas which may exist as a result of super chlorination (not daily sanitation) may eventually cause discoloration or degradation to the bottom of the cover or the tile grouting, which would not be covered under the terms of your warranty.

IMPORTANT: Always allow the Free Available Chlorine to fall to 5 ppm before using your spa.

WARNING: Never leave an open spa unattended, especially if there are children present!

BUILDING A SANITIZER ROUTINE

During the first month of ownership, measure the sanitizer residual daily in order to establish standards for User Load and Usage Time versus Sanitizer Needed.

- The User Load of the spa is the number of times anyone enters the spa.
- The Usage Time is simply the amount of time a user spends in the spa.
- Sanitizer Needed is the amount of Free Available Chlorine needed to accommodate the number of users and their combined usage time.

For example, two spa users who regularly use the spa once an evening for twenty minutes create a specific and somewhat consistent demand on the sanitizer. During the first month of ownership, these two users can determine exactly how much sanitizer to use in order to maintain the proper residual. If, at any time, the user load and/or usage pattern changes dramatically (invited guests), the amount and frequency of sanitizer required increases dramatically.

The greater the usage time or the bather load, the faster the residual value is diminished.

CHLORINE MAINTENANCE SCHEDULE

Recommended Chlorine	Sodium dichloro-s-triazinetriene, granular or Sodium dichloro-isocyanurate, granular (common name: Dichlor Chlorine, granular, 53%-65% available chlorine)
Daily Maintenance	Maintain a level of 3-5 ppm Free Available Chlorine when spa is in use. Add the recommended amount of dichlor into the filter compartment while the jet pump is operating. Run the jet pump for 10 minutes.
Weekly Maintenance	Super chlorinate (shock treatment): Add the recommended amount of dichlor (open cover) into the filter compartment while the jet pump is operating to raise the free available chlorine residual above 10 ppm. Run the jet pump for 10 minutes. Allow the free chlorine residual to drop to 5 ppm before using the spa!
Important	<ul style="list-style-type: none"> • A spa being used over an extended period of time, such as a whole afternoon or evening, will need chlorine added at least every hour or more frequently to maintain the average level of 3-5 ppm free chlorine residual. • The use of trichloro-s-triazinetriene (tri-chlor) for water sanitation, or swimming pool acid (muriatic acid) to lower the pH could damage your spa and is not recommended. • Keeping the spa cover on and secured at all times (except when the spa is in use) will reduce the chemical demand and help to maintain the spa's energy efficiency. • Always add all spa chemical into the filter compartment while the jet pump is operating. • Always test the spa water temperature with your hand to make sure it is comfortable before entering.
Warning	Improper water chemistry or the use of non-recommended chemicals may cause severe damage to the spa surface or equipment which is not covered by the spa warranty!

SUPPLEMENTAL WATER MAINTENANCE

Proper water sanitation and mineral balance (pH control) are absolutely essential for a complete spa water maintenance program. Here are three other popular water additives that are optional:

Flocculating Agent

The flocculent clarifies the water by removing particles too small for some cartridge filters to catch. The flocculating agent consists of relatively large particles, which when added to water, attract smaller particles to them like magnets. The small particles attach to the flocculating agent's large particles to form a combination which is large enough to be trapped in the filter. It is important to remember that the use of flocculating agents does not improve water sanitization. With proper sanitation, the small particles are rendered inert (biologically dead).

Foam Inhibitors

Spa water requires changing due to the buildup of soap in the water. Typically, soap will cause the spa water to foam when the jets are used. Soap is introduced into the spa water from two sources: users' bodies, which retain a soap residual after showering, and swimming apparel, which retains soap after washing.

Foam inhibitors can suppress foam, but cannot remove soap from the water. Soap is very difficult to remove from the water because soap is not oxidized by any chemical added to the spa. Only ozone can oxidize soap.

Eventually the soap build-up in the water will be concentrated, resulting in an unclean feeling on the bather's skin which is impossible to remedy. When this occurs, it's time to drain and refill the spa. Depending on the soap input, the water should last about 4 months before needing to be drained.

Mineral Deposit Inhibitors

As water evaporates from your spa and new water is added, the amount of dissolved minerals will increase. (Minimize evaporation by keeping the cover on the spa whenever possible.) The spa water may eventually become "hard" (Calcium Hardness too high) enough to damage the heater by calcifying its surface. Proper pH control can minimize this.

Normal soap build-up will require water replacement regularly enough that mineral deposits normally are not a problem.

Occasionally, high iron or copper content in the water may produce green or brown stains on the spa. A mineral deposit inhibitor may help to reduce these metals.

NOTE: Well water may contain high concentrations of minerals. The use of a low water volume, extra-fine pore water filter (in-line pre-filter such as the FreshStart™_{10,000} Pre-filter) will help to remove many of the larger particles during the filling of the spa. In-line pre-filters can be purchased at your local Hot Spring® Spa dealer.

OZONE

The FreshWater® II High Output Ozone system is the only ozone purification system approved for installation in your Hot Spring® Spa. The FreshWater® II Ozone system utilizes corona discharge (CD) technology to produce a higher concentration of ozone than is produced by competing ultraviolet light (UV) ozone systems.

The under-the-skirt mounted FreshWater® II unit offers less-visible installation and is less susceptible to the effects of freezing temperatures. To access it for inspection, remove the equipment compartment door to check the unit operation (this is usually done prior to disconnecting the power to the spa before draining). Simply listen for the buzz of the transformer to verify operation of the FreshWater® II Ozonator.

The Hot Spring® Spa FreshWater® II High Output Ozone System greatly enhances the quality of the spa water when used to supplement the spa owner's regular water maintenance program. Contrary to some information circulated throughout the pool and spa industry regarding ozone systems, ozone CAN NOT be used as a single-source sanitizer, water clarifier, anti-foamer, and mineral chelating agent. Watkins Manufacturing Corporation recommends that a chemical maintenance program based on recognized and documented industry standards still be followed when using an ozone purification system to assure water sanitation and the highest quality purified water.

Cleaning the Ozone Injector

On occasion, a mineral build-up may clog the ozone injector causing a lack of flow or low flow of ozone bubbles. To prevent this, refer to the following instructions to clean the injector:

1. Disconnect power to the spa.
2. Access the equipment compartment.
3. Locate the kynar tubing that connects the ozone injector to the bottom of the ozonator. Remove the tubing from the bottom of the ozonator.
4. Place 16 ounces of white vinegar into a cup or bucket. Place the end of the kynar tubing into the vinegar.
5. Reconnect power to the spa.
6. Run the spa until all 16 ounces of the vinegar are gone. This should allow an ample flow of vinegar to be run through the injector and clear the blockage.
7. Disconnect power to the spa.
8. Remove the empty cup or bucket.
9. Reinstall the tubing to the bottom of the ozonator.
10. Close the equipment compartment door.
11. Reconnect power to the spa.

DOS AND DON'TS

- DON'T use swimming pool (muriatic) acid to lower pH.
- DON'T splash pH increaser additives on the redwood skirt.
- DON'T use Compressed Sanitizers.

Bromine is an effective sanitizer; however, the methods by which it is administered to the spa water and the quality of the bromine product varies greatly among manufacturers.

The use of bromine sticks or tablets in floaters, which may become entrapped in a lounge or cooling seat (or sink to the spa floor), have been shown to cause discoloration of or surface distress to a spa's shell.

- DON'T use a floater type sanitization system as a low or no maintenance solution to your spa maintenance program.

The spa shell easily can withstand the effects of a properly administered sanitizer. Floating dispensers can become trapped in one area and cause an over-sanitization (or chemical burn) of that particular area.

If the dispenser setting is too high, the high concentration can discolor the spa shell and damage the underside of the cover.

Automatic floating dispensers have a tendency to either over-brominate or under-brominate as the rate of erosion varies greatly. Damage to the spa and cover can occur very quickly.

WARNING: Watkins Manufacturing Corporation DOES NOT recommend the use of any floating chemical dispenser. Damage to the spa shell or components caused by a floating chemical dispenser is specifically not covered under the terms of the limited warranty.

- DON'T use a sanitizer which is not designed for spas.
- DON'T use Household Bleach (liquid sodium hypochlorite).
- DON'T broadcast or sprinkle the chemicals onto the water surface. This method may cause chemically-induced spa surface blistering (chemical abuse).
- DO add all chemicals slowly into the filter compartment with the jet pump operating for 10 minutes.
- DO use special care if using baking soda to clean either the interior or exterior plastic surfaces.

COMMON WATER CHEMISTRY QUESTIONS

Question: Why can't I use a floater to sanitize my spa water?

Answer: Watkins does not recommend the use of a floater for three reasons.

1. The floater is unable to control the rate at which sanitizer is dissolved into the water. When a floater is first placed in a spa, the sanitizer level can be extremely high. High sanitizer levels can chemically burn or discolor the spa's shell or the underside of the cover. Then, after a period of time, the sanitizer level dispensed by the floater will fall to near zero. A low sanitizer level will allow viruses, bacteria or algae to grow.
2. Floaters tend to stay in one area of the spa most of the time (usually over the cool down seat), causing this area to be exposed to extreme sanitizer levels.
3. The floater may allow pieces of the highly concentrated sanitizer to fall out and settle on the floor or seat of the spa shell. These pieces of sanitizer will chemically burn (blister) the spa shell. Although your spa shell is specifically designed to resist the effects of spa chemicals, no spa surface can withstand this type of highly concentrated chemical. Remember, chemical abuse is specifically not covered under the terms of the warranty.

Question: When I open my spa, I smell chlorine. How do I get rid of this smell?

Answer: There are two types of chlorine in your spa. The first is the Free Available Chlorine (FAC), which is the chlorine available to sanitize your spa. This type of chlorine does not have an odor. The second is Chloramine, which is residue from chlorine already expended. Chloramines have a strong chlorine odor. The smell from Chloramines can be eliminated by "shocking" the water. If you smell chlorine in the water, your spa is reminding you to add a shock treatment.

Question: Why can't I fill my spa with soft water?

Answer: Soft water is essentially the same as regular water except that most or all of the calcium has been replaced by sodium. Soft water may be corrosive to the heater and other components. Replacement of spa components damaged by soft water is extremely expensive.

Question: I am trying to reduce the number of chemicals to which my family is exposed. Do I really need to use so many chemicals and in such large amounts?

Answer: While over-exposure to any chemical can be unhealthful, many low levels of chemicals are effective and beneficial. In the case of spa water, the chemicals recommended in the Hot Spring® Water Maintenance program are needed to protect the user from water-borne pathogens (disease-causing microbes) and to prevent corrosion of spa components. The Hot Spring® Spa EverFresh® Water Care System minimizes the use of chemicals with harsh side effects, such as halogen sanitizers.

Question: Why isn't water chemistry damage covered by the warranty?

Answer: The chemical levels and water quality of the water in the spa are under your direct control. With proper basic care, the spa will provide many years of hot water relaxation. If you are unsure about any chemical or its usage in the spa, contact your Authorized Dealer or Watkins Manufacturing.

WATER TERMINOLOGY

The following chemical terms are used in this Water Quality and Maintenance section. Understanding their meaning will help you to better understand the water maintenance process.

Bromamines: Compounds formed when bromine combines with nitrogen from body oils, urine, perspiration, etc. Unlike chloramines, bromamines have no pungent odor and are effective sanitizers.

Bromine: A halogen sanitizer (in the same chemical family as chlorine). Bromine is commonly used in stick, tablet, or granular form. See the DO's and DON'Ts of Spa Water Maintenance for additional information.

Calcium Hardness: The amount of dissolved calcium in the spa water. This should be approximately 150-200 ppm. High levels of calcium can cause cloudy water and scaling. Low levels can cause harm to the spa equipment.

Chloramines: Compounds formed when chlorine combines with nitrogen from body oils, urine, perspiration, etc. Chloramines can cause eye irritation as well as having a strong odor. Unlike bromamines, chloramines are weaker, slower sanitizers.

Chlorine: An efficient sanitizing chemical for spas. Watkins Manufacturing Corporation recommends the use of Sodium Dichlor-type granulated chlorine. This type is preferred because it is totally soluble and nearly pH neutral.

Chlorine (or Bromine) Residual: The amount of chlorine or bromine remaining after chlorine or bromine demand has been satisfied. The residual is, therefore, the amount of sanitizer which is chemically available to kill bacteria, viruses and algae.

Corrosion: The gradual wearing away of metal spa parts, usually caused by chemical action. Generally, corrosion is caused by low pH or by water with levels of TA, CH, pH or sanitizer which are outside the recommended ranges.

DPD: The preferred reagent used in test kits to measure the Free Available Chlorine.

Halogen: Any one of these five elements: fluorine, chlorine, bromine, iodine and astatine.

MPS: Monopersulfate is the non-chlorine oxidizer used with the FreshWater_{Ag+}™ Silver Ion Purification system.

Ozone: Ozone is a powerful oxidizing agent which is produced in nature and artificially by man. Ozone forms no by-product such as chloramines (ozone actually oxidizes chloramines) and will not alter the water's pH.

Pathogen: A microorganism such as bacterium that cause disease.

pH: The measure of the spa water's acidity and alkalinity. The recommended pH for the spa water is 7.4 to 7.6. Below 7.0 (considered neutral), the spa water is too acidic and can damage the heating system. Above 7.8, the water is too alkaline and can result in cloudy water and scale formation on the shell and heater.

ppm: The abbreviation of "parts per million", the standard measurement of chemical concentration in water. Identical to mg/l (milligrams per liter).

Reagent: A chemical material in liquid, powder or tablet form for use in chemical testing.

Scale: Rough calcium-bearing deposits that can coat spa surfaces, heaters, plumbing lines and clog filters. Generally, scaling is caused by mineral content combined with high pH. Additionally, scale forms more readily at higher water temperatures.

Super-Chlorination: Also known as "shock treatment." Super-Chlorination is a process of adding significant doses of a quick dissolving sanitizer ("dichlor" is recommended) to oxidize non-filterable organic waste and to remove chloramines and bromamines.

Total Alkalinity: The amount of bicarbonates, carbonates, and hydroxides present in spa water. Proper total alkalinity is important for pH control. If the TA is too high, the pH is difficult to adjust. If the TA is too low, the pH will be difficult to hold at the proper level. The desired range of TA in spa water is 125 to 150 ppm.

VII. SERVICE INFORMATION

GENERAL INFORMATION

Your Hot Spring® Spa has been designed to provide years of trouble-free use. As with any appliance, problems may occasionally occur that require the expertise of a qualified service person. Though such simple repairs as resetting a GFCI switch or breaker, resetting a high limit thermostat or replacing a light bulb may not require a service call, they may indicate that a more serious condition exists. These conditions may require an experienced service person. Before calling for service, please refer to the Troubleshooting Guide.

NOTE: Always retain your original sales receipt for future reference.

GFCI AND HIGH LIMIT THERMOSTAT

If your spa fails to operate at any time, first check the power supply to the spa.

In 115 volt models, check the GFCI at the end of the power cord. In 230 volt models, check each of the GFCI breakers in the subpanel. If a GFCI has tripped, reset it. If it will not reset, this may be an indication of a ground fault (short circuit) within the electrical components. Contact an Authorized Service Technician for a complete diagnosis.

If upon checking the GFCI's you find that they have not tripped, check the house breaker panel and ensure the main breaker for the electrical circuit supplying the spa has not tripped. If it has, this is an indication that the circuit was either overloaded or a ground fault exists between the breaker panel and the spa receptacle or subpanel. Contact a qualified electrician.

If upon checking the main house breaker and spa GFCI's you find no failures, check the high limit thermostat. To check it, simply turn off power to the spa for 30 seconds. This will automatically reset the high limit thermostat if it has tripped. If the spa energizes once you turn the power back on, this indicates reduced water flow through the heating system. Tripping of the high limit thermostat is normally a result of one or a combination of these problems. 1) clogged filter cartridge, 2) blockage within the system plumbing, 3) a non-functioning heater circulation pump, 4) power was not disconnected from the spa before it was drained, 5) an air lock in the plumbing lines. (The Power Indicator on the front of the spa's control panel will also be blinking if the high limit thermostat circuit has tripped.)

If the spa does not function after tripping and resetting the GFCI's or resetting the high limit thermostat, then the problem should be referred to an Authorized Service Technician. Refer to the Heater section if the spa operates but does not heat, or refer to the Troubleshooting Guide for additional service information.

NO-FAULT® 6000 HEATER AND HEATER THERMAL CUT-OFF

The Hot Spring® Spa No-Fault® 6000 Heater is called the No-Fault® Heater because it comes with an unconditional warranty. This means that any failure during the stated warranty period that requires the replacement of the heater will be warranted unconditionally.

It is important to note that the Hot Spring® Spa heater is protected by both the heater high limit thermostat circuit and the heater thermal cut-off. The causes of heater high limit tripping are discussed in the previous section.

If the spa is not heating, but the pump and light operate, then the heater thermal cut-off may have tripped. To reset it, simply locate the red button on top of the heater and push down on the button. If the heater energizes once you push the heater thermal cut-off button, this indicates reduced water flow through the heating system. Tripping of the heater thermal cut-off is normally a result of one or a combination of these problems: 1) a clogged filter cartridge, 2) blockage within the system plumbing, 3) power was not disconnected to the spa before it was drained, or 4) an air lock in the plumbing lines. Once the problem has been identified and corrected the heater thermal cut-off will be able to be reset which will energize the heater.

SILENT FLO® 5000 CIRCULATION PUMP AND CIRCULATION PUMP THERMAL CUT-OFF

The Hot Spring Silent Flo® 5000 circulation pump is a dedicated, water cooled, energy efficient, quiet pump that provides continuous filtration for the spa. Since the Silent Flo® 5000 pump is water cooled, it is equipped with a thermal cut-off to prevent the pump from being damaged by running hot when water is not present.

Reset the circulation pump's thermal cut-off by disconnecting power to the spa and allowing the pump to cool.

Tripping of the thermal cut-off is normally the result of one or a combination of these problems: 1) a clogged filter cartridge, 2) blockage within the system plumbing, 3) power was not disconnected to the spa before it was drained, or 4) an air lock in the plumbing lines. Once the problem has been identified and corrected the pump thermal cut-off will be able to be reset which will allow it to operate normally.

FRESHWATER® II OZONE SYSTEM

The FreshWater® II Ozone System is practically maintenance-free because it is located within the spa's equipment compartment. If bubbles are appearing at the spa's heater return but the smell of ozone is not noticeable (the water may also appear not as clear as usual) then the operation of the ozone generator should be checked. Carefully open the equipment compartment door (remember to use care, as power is still connected to the spa) and verify that the CD tube and its transformer are energized (a slight buzz will be emitted from the ozone generator housing). If a slight buzz or hum is not audible, verify that the generator is completely plugged into the spa's control box.

If the unit is plugged in and power is connected to the spa, then the fuse (for the ozone generator) should be checked.

WARNING: Contact your Hot Spring® Spa dealer if your spa requires troubleshooting beyond the scope of this manual. Freshwater® II Ozone Systems should only be serviced by a qualified technician.

WARRANTY NOTE: Cleaning of the ozone injector is not covered under the warranty. Refer to page 43 of this manual for ozone injector cleaning instructions.

MISCELLANEOUS SERVICE INFORMATION

The control and high limit thermostats are equipped with electronic sensors that are connected to the spa's plumbing. Never cut or kink the wires that connect the sensors to the thermostats within the control box.

The jet pump is equipped with a thermal overload cutoff switch that is designed to protect the pump from overheating. If the pump shuts itself off in an older spa, it could indicate failure of the pump motor bearings. If the pump shuts itself off in a new spa, it is usually the result of one or a combination of the following factors:

- Thermal Overload: Although mass-produced, not all thermal overload cutoffs are exactly the same. Some are more sensitive than others and will shut the pump off at lower temperatures.
- High Temperature: All Hot Spring® Spa models are equipped with a jet pump shroud that vents the heat generated by the pump motor to the outside of the equipment compartment. If the vent is blocked by masonry, grass or debris, overheating of the jet pump may occur. Once the pump motor has cooled sufficiently and any blockage has been removed from the vent opening, the jet pump can be restarted.
- Friction: Sometimes the moving parts of a new pump are tight enough to cause heat buildup due to friction. After a normal break-in period, the pump will run cooler.
- Improper Wiring: If the spa is connected with an extension cord, and/or the house wiring is undersized, the pump may starve for voltage and therefore may draw more amperage and generate excessive heat.
- If the pump is shutting down due to excessive heat, make sure the equipment compartment has adequate ventilation. The air gap at the bottom must not be blocked. Should your jet pump continue to shut off after short periods of use, contact a qualified service technician.

ACTS INVALIDATING WARRANTY

The limited warranty is void if the Hot Spring® Spa has been improperly installed, subjected to alteration, misuse or abuse, or if any repairs on the spa are attempted by anyone other than an authorized representative of Watkins Manufacturing Corporation. Alteration shall include any component or plumbing change, electrical conversion, or the addition of any non-approved sanitation or water purification device or heating system which contributes to component or unit failure or unsafe operating system. Misuse and abuse shall include: Any operation of the spa other than in accordance with Watkins Manufacturing Corporation's printed instructions, or use of the spa in an application for which it is not designed.

Specifically: Use of the spa in a non-residential application; damage caused by operation of the spa outside the specified voltage requirements (115V or 230V \pm 10%) or operation of the spa at water temperatures outside the range of 32°F and 120 °F; damage caused by voltage spikes or "brown out" conditions; damage caused by dirty, clogged or calcified filter cartridges (see Spa Care and Maintenance instructions in this Owner's Manual); damage to the spa surface caused by the use of Tri-Chloro chlorine, chemical tablets in a floater, acid, or any other spa sanitizing chemicals or spa surface cleaners which are not recommended by Watkins Manufacturing Corporation; damage to components (excluding the No-Fault® 6000 heater) or spa surface caused by improper pH balance or other improper water chemistry maintenance; and damage to the spa surface caused by leaving the spa uncovered while empty of water and in direct exposure to sunlight (this may cause solar heating distress) are considered abuses and may invalidate this warranty.

The filter lid on the spa is not designed to support heavy weight loads and should not be used as a seat. In extreme cases the lid could crack and break. This occurrence is considered abuse and is not covered under this warranty.

DISCLAIMERS

Watkins Manufacturing Corporation shall not be liable for loss of use of the Hot Spring® Spa or other incidental, consequential, special, indirect, or punitive costs, expenses or damages, which may include but are not limited to the removal of a permanent deck or other custom fixture or the necessity for crane removal. Any implied warranty shall have a duration equal to the duration of the applicable limited warranty stated above. Some states do not allow limitations on how long an implied warranty lasts. Under no circumstances shall Watkins Manufacturing Corporation or any of its representatives be held liable for injury to any person or damage to any property, however arising.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations may not apply to you.

WATKINS CUSTOMER SERVICE

If you have any questions about any aspect of your Hot Spring® Spa set-up, operation or maintenance that have not been answered by this manual, consult your Hot Spring® Spa dealer.

Watkins Manufacturing Corporation can be reached at: 800-999-4688 (Extension 432), Monday through Friday, 8 am to 5 pm Pacific Standard Time (PST), or e-mail custsvc@watkinsmfg.com.

TROUBLESHOOTING

Should you experience any problem whatsoever, do not hesitate to contact your authorized Hot Spring® Spa dealer. Here are some tips to help you to diagnose and rectify some more common sources of trouble yourself, if you choose to do so.

GENERAL OPERATION TROUBLESHOOTING GUIDE		
Problem	Probable causes	Solutions
Entire spa is inoperative	<ul style="list-style-type: none"> • Power failure • GFCI tripped • Heater high limit thermostat tripped 	<ul style="list-style-type: none"> • Check power source • Reset GFCI; call for service if it will not reset • Disconnect power for at least thirty seconds to reset heater high limit. If it will not reset, check for clogged filters. If tripping continues, call for service.
Spa does not heat; jets and light operate (Ready indicator is dark)	<ul style="list-style-type: none"> • Heater thermal cut-off tripped • Circulation pump thermal cut-off tripped 	<ul style="list-style-type: none"> • Reset heater thermal cut-off and check for clogged filters. Heater thermal cut-off will reset when the flow of water through the heater has been restored. Call for service if it heater thermal cut-off trips frequently. • Check for clogged filters or airlocks in plumbing. Disconnect power to the spa, allow circulation pump to cool. Circulation pump thermal cut-off will reset when pump has cooled and power is reapplied. Call for service if circulation pump thermal cut-off trips frequently.
Jets weak or surging	<ul style="list-style-type: none"> • Spa water level too low • Filters clogged • Comfort Control® valves closed 	<ul style="list-style-type: none"> • Add water • Clean filters • Open Comfort Control® valves
Light inoperative	<ul style="list-style-type: none"> • Bulb burned out 	<ul style="list-style-type: none"> • Replace bulb
Moto-Massage® Jet inoperative or erratic	<ul style="list-style-type: none"> • Comfort Control® valves closed • Filters clogged 	<ul style="list-style-type: none"> • Open Comfort Control® valves • Clean filters
Power indicator blinking (Entire spa inoperative)	<ul style="list-style-type: none"> • Heater high limit thermostat tripped 	<ul style="list-style-type: none"> • Disconnect power for at least thirty seconds to reset heater high limit. If it will not reset, check for clogged filters. If tripping continues, call for service.
Ready indicator blinking	<ul style="list-style-type: none"> • Temperature sensor problem 	<ul style="list-style-type: none"> • Disconnect power for at least thirty seconds. If blinking continues, call for service.

SPA WATER MAINTENANCE TROUBLESHOOTING GUIDE		
Problem	Probable causes	Solutions
Cloudy Water	<ul style="list-style-type: none"> • Dirty filters • Excessive oils / organic matter • Improper sanitization • Suspended particles / organic matter • Overused or old water 	<ul style="list-style-type: none"> • Clean filters • Shock spa with sanitizer • Add sanitizer • Adjust pH and/or alkalinity to recommended range • Run jet pump(s) and clean filters • Drain and refill the spa
Water Odor	<ul style="list-style-type: none"> • Excessive organics in water • Improper sanitization • Low pH 	<ul style="list-style-type: none"> • Shock spa with sanitizer • Add sanitizer • Adjust pH to recommended range
Chlorine Odor	<ul style="list-style-type: none"> • Chloramine level too high • Low pH 	<ul style="list-style-type: none"> • Shock spa with sanitizer • Adjust pH to recommended range
Musty Odor	<ul style="list-style-type: none"> • Bacteria or algae growth 	<ul style="list-style-type: none"> • Shock spa with sanitizer—if problem is visible or persistent, drain, clean and refill the spa
Organic buildup / scum ring around spa	<ul style="list-style-type: none"> • Buildup of oils and dirt 	<ul style="list-style-type: none"> • Wipe off scum with clean rag—if severe, drain the spa, use a spa surface and tile cleaner to remove the scum and refill the spa
Algae Growth	<ul style="list-style-type: none"> • High pH • Low sanitizer level 	<ul style="list-style-type: none"> • Shock spa with sanitizer and adjust pH • Shock spa with sanitizer and maintain sanitizer level
Eye Irritation	<ul style="list-style-type: none"> • Low pH • Low sanitizer level 	<ul style="list-style-type: none"> • Adjust pH • Shock spa with sanitizer and maintain sanitizer level
Skin Irritation / Rash	<ul style="list-style-type: none"> • Unsanitary water • Free chlorine level above 5 ppm 	<ul style="list-style-type: none"> • Shock spa with sanitizer and maintain sanitizer level • Allow free chlorine level to drop below 5 ppm before spa use
Stains	<ul style="list-style-type: none"> • Total alkalinity and/or pH too low • High iron or copper in source water 	<ul style="list-style-type: none"> • Adjust total alkalinity and/or pH • Use a metal deposit inhibitor
Scale	<ul style="list-style-type: none"> • High calcium content in water—total alkalinity and pH too high 	<ul style="list-style-type: none"> • Adjust total alkalinity and pH—if scale requires removal, drain the spa, scrub off the scale, refill the spa and balance the water



WATKINS MANUFACTURING CORPORATION
VISTA, CALIFORNIA
USA



This manual contains installation, operating, maintenance and service information for the following Hot Spring[®] Spa models:



<u>USA MODELS</u>	<u>EFFECTIVE DATE</u>	<u>CANADIAN MODELS</u>	<u>EFFECTIVE DATE</u>
GRANDEE [®] (Model G)	1/99	GRANDEE [®] (Model GC)	1/99
LANDMARK [®] (Model S)	1/99	LANDMARK [®] (Model SC)	1/99
CLASSIC [®] (Model F)	1/99	CLASSIC [®] (Model FC)	1/99
SOVEREIGN [®] (Model I)	1/99	SOVEREIGN [®] (Model IC)	1/99
PRODIGY [®] (Model H)	1/99	PRODIGY [®] (Model HC)	1/99
JETSETTER [®] (Model J)	1/99	JETSETTER [®] (Model JC)	1/99

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